July 21, 2000

Mr. Michael T. Coyle
Vice President
Clinton Power Station
AmerGen Energy Company, LLC
Mail Code V-275
P. O. Box 678
Clinton, IL 61727

SUBJECT: CLINTON - NRC EXAMINATION REPORT 50-461/2000301(DRS)

Dear Mr. Coyle:

On June 17, 2000, the NRC completed initial operator licensing examinations at your Clinton Power Station. The enclosed report presents the results of the examination.

Three of your previously licensed reactor operators were administered senior reactor operator license examinations and six other applicants were administered reactor operator license examinations. The license applicants' performance evaluations were finalized on July 17, 2000. All applicants passed all sections of their examinations and were issued their respective operator licenses with the exception of one reactor operator. That license was withheld pending receipt of a medical certification.

Based upon the results of the examination activities, one issue of low safety significance (Green) was identified. This issue was determined to involve a violation of requirements. However, the violation was not cited due to its low safety significance and because it was entered into your corrective action program. If you contest this non-cited violation, you should provide a response within 30 days of the date of this inspection report, with the basis for your denial, to the Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington DC 20555-0001; with copies to the Regional Administrator, Region III; the Director, Office of Enforcement, United States Nuclear Regulatory Commission, Washington DC 20555-0001; and the Resident Inspector at the Clinton Power Station.

In accordance with 10 CFR 2.790 of the NRC's "Rules of Practice," a copy of this letter and its enclosure will be available **electronically** for public inspection in the NRC Public Document Room **or** from the *Publicly Available Records (PARS) component of NRC's document system (ADAMS)*. ADAMS is accessible from the NRC Web site at http://www.nrc.gov/NRC/ADAMS/index.html (the Public Electronic Reading Room).

We will gladly discuss any questions you have concerning this examination.

Sincerely

Michael E. Bulby for

David E. Hills, Chief
Operations Branch
Division of Reactor Safety

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

Enclosures:
1. Operator Licensing Examination Report 50-461/2000301(DRS)
2. Simulation Fidelity Report
3. Written Examination and Answer Keys (RO/SRO)

cc w/encls 1 and 2:
P. Hinnenkamp, Plant Manager
M. Reandeau, Director - Licensing
G. Rainey, Chief Nuclear Officer
E. Wrigley, Manager-Quality Assurance
M. Aguilar, Assistant Attorney General
G. Stramback, Regulatory Licensing Services Project Manager General Electric Company
Chairman, DeWitt County Board
State Liaison Officer
Chairman, Illinois Commerce Commission

cc w/encls 1, 2, 3:
V. Cwietniewicz, Training Manager

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U.S. NUCLEAR REGULATORY COMMISSION

REGION III

Docket No:	50-461
License No:	NPF-62
Report No:	50-461
Licensee:	AmerGen Energy Company
Facility:	Clinton Power Station
Location:	Route 54 West Clinton, IL 61727
Dates:	June 12–17, 2000
Examiners:	D. McNeil, Chief Examiner D. Roth, Examiner D. Muller, Examiner J. Hopkins, Certifying Examiner
Approved by:	David E. Hills, Chief, Operations Branch Division of Reactor Safety

NRC's REVISED REACTOR OVERSIGHT PROCESS

The federal Nuclear Regulatory Commission (NRC) recently revamped its inspection, assessment, and enforcement programs for commercial nuclear power plants. The new process takes into account improvements in the performance of the nuclear industry over the past 25 years and improved approaches of inspecting and assessing safety performance at NRC licensed plants.

The new process monitors licensee performance in three broad areas (called strategic performance areas): reactor safety (avoiding accidents and reducing the consequences of accidents if they occur), radiation safety (protecting plant employees and the public during routine operations), and safeguards (protecting the plant against sabotage or other security threats). The process focuses on licensee performance within each of seven cornerstones of safety in the three areas:

Reactor Safety

- Initiating Events
- Mitigating Systems
- Barrier Integrity
- Emergency Preparedness

Radiation Safety

- Occupational
- Public

Safeguards

- Physical Protection

To monitor these seven cornerstones of safety, the NRC uses two processes that generate information about the safety significance of plant operations: inspections and performance indicators. Inspection findings will be evaluated according to their potential significance for safety, using the Significance Determination Process, and assigned colors of GREEN, WHITE, YELLOW or RED. GREEN findings are indicative of issues that, while they may not be desirable, represent very low safety significance. WHITE findings indicate issues that are of low to moderate safety significance. YELLOW findings are issues that are of substantial safety significance. RED findings represent issues that are of high safety significance with a significant reduction in safety margin.

Performance indicator data will be compared to established criteria for measuring licensee performance in terms of potential safety. Based on prescribed thresholds, the indicators will be classified by color representing varying levels of performance and incremental degradation in safety: GREEN, WHITE, YELLOW, and RED. GREEN indicators represent performance at a level requiring no additional NRC oversight beyond the baseline inspections. WHITE corresponds to performance that may result in increased NRC oversight. YELLOW represents performance that minimally reduces safety margin and requires even more NRC oversight. And RED indicates performance that represents a significant reduction in safety margin but still provides adequate protection to public health and safety.

The assessment process integrates performance indicators and inspection so the agency can reach objective conclusions regarding overall plant performance. The agency will use an Action Matrix to determine in a systematic, predictable manner which regulatory actions should be taken based on a licensee's performance. The NRC's actions in response to the significance (as represented by the color) of issues will be the same for performance indicators as for inspection findings. As a licensee's safety performance degrades, the NRC will take more and increasingly significant action, which can include shutting down a plant, as described in the Action Matrix.

More information can be found at: http://www.nrc.gov/NRR/OVERSIGHT/index.html.

SUMMARY OF FINDINGS

Clinton Power Station
NRC Examination Report 50-461/2000301(DRS)

During the week of June 12, 2000, NRC examiners conducted an operator licensing initial examination in accordance with the guidance of NUREG-1021, "Operator Licensing Examination Standards for Power Reactors," Revision 8. This examination implemented the operator licensing requirements of 10 CFR §55.41, §55.43 and §55.45. Three senior reactor operator applicants and six reactor operator applicants were administered the written examination and operating tests.

Examination Summary:

- All applicants passed all portions of their respective examinations and were awarded senior reactor operator licenses or reactor operator licenses. One applicant was not issued an operator license pending medical certification by the station's medical examiner (Section 4OA5.1).

Findings

- Green. A non-cited violation involving compromise of licensed operator initial license examination material was identified. The licensee inadvertently video taped the NRC test validation and allowed unauthorized access to the videotape. The safety significance was low because the issue was identified and corrected before administration of the examination material (Section 4OA5.2).

Report Details

4. OTHER ACTIVITIES (OA)

4OA5 Other

.1 Initial Licensing Examinations

a. Scope

The NRC examiners conducted announced operator licensing initial examinations during the week of June 12, 2000. The NRC developed the written examinations and operating tests. Three senior reactor operator applicants and six reactor operator applicants received written examinations and operating tests.

b. Findings

The written examination was administered on June 17, 2000, in accordance with NUREG-1021, "Operator Licensing Examination Standards for Power Reactors," Revision 8. The NRC examiners graded the written examination and concluded that all nine applicants achieved the passing criteria of 80 percent, with an average score of approximately 90 percent. The examiners identified the following generic performance deficiencies after grading the written examinations:

- Reactor Operator Q#27, Senior Reactor Operator Q#2 - five applicants concluded that Residual Heat Removal was available to use to supplement fuel pool cooling at high power levels. This is specifically excluded at high power levels at Clinton Power Station.

- Reactor Operator Q#77, Senior Reactor Operator Q#52 - six applicants were unable to specify the correct starting sequence for lube oil pumps as the main turbine shaft lube oil pump discharge pressure begins decreasing.

- Reactor Operator Q#92, Senior Reactor Operator Q#67 - five applicants were unable to specify the correct method of releasing a clearance section if the clearance section holder is not available on the site to release the clearance section.

- Reactor Operator Q#97, Senior Reactor Operator Q#72 - five applicants were unable to accurately calculate their stay time in a 6700 mrem radiation field to save a life.

The licensee did not submit any post-examination comments. The examiners determined that one question had two correct answers. In Reactor Operator Q#60, Senior Reactor Operator Q#35 - answer b. was assigned as the correct answer assuming the feedwater pumps would pump at design capacity. However, in the actual plant, the capacity of one feed pump has been found to be adequate to restore reactor pressure vessel water level to the normal setpoint at power levels up to nearly

95 percent rated thermal power. Depending on the training or actual experience of each applicant, either answer a. or b. was correct. The answer key was amended to accept either a. or b. as a correct answer.

The NRC examiners administered the operating tests during the week of June 12, 2000. The NRC examiners concluded that all nine applicants' performance on the operating test was acceptable. The examiners identified the following generic performance deficiencies while administering the operating tests:

- During administration of an alternate path job performance measure, some applicants were slow to recognize the failure of a damper to open. This may indicate an incomplete application of the "STAR" (Stop Think Act Review) program where applicants failed to review the results of their actions.

- Diagnostic skills in some cases were weak. One crew completely failed to diagnose a slowly drifting open recirc flow control valve, and ultimately scrammed the reactor in response to the failure. Follow up questioning revealed that the crew members did not know what had actually occurred during the event. Another example involved a simulated failure of a reactor pressure vessel level instrument. All three initial license crews had some difficulty diagnosing the failed instrument. One applicant indicated that he thought the other two reactor pressure vessel level instruments were failing low rather than a failure of the one instrument.

The NRC examiners also identified several individual deficiencies in applicant performance during the operating examination which are described in each individual's examination report, Form ES-303-1, "Operator Licensing Examination Report." The NRC forwarded copies of the evaluations under separate correspondence to the Site Training Manager.

.2 Examination Security

a. Scope

The examiners evaluated the licensee's performance with respect to initial examination security as governed by 10 CFR 55.49. In accordance with 10 CFR 55.49, "applicants, licensees, and facility licensees shall not engage in any activity that compromises the integrity of any applicant, test, or examination required by this part."

b. Findings

During the week of May 29, 2000, NRC examiners validated the operating test on the Clinton Power Station plant specific simulator. On May 30, 2000, the licensee's employees started a video recording device during a training session conducted immediately before the NRC started validation activities. The video recording device was not stopped by the instructor that conducted the training session. Trainers assisting in the NRC test validation effort did not stop the recording device. This resulted in several hours of NRC test validation being recorded on the video tape. The video tape

was not discovered until the morning of May 31, 2000, when a trainer that was not authorized to view NRC examination material played back the tape and discovered the examination validation recording. The compromised examination material necessitated replacement and validation of most of the job performance measure operating test. The compromise of examination material through the video taping of the NRC validation session was considered a violation of 10 CFR 55.49, "Integrity of Examinations and Tests" (50-461/2000301-01(DRS)). This Severity Level IV violation is being treated as a Non-Cited Violation, consistent with Section VI.A.1 of the NRC Enforcement Policy. This violation is in the licensee's corrective action program as Clinton Condition Report No. 2-00-05-115. The safety significance was low because the issue was identified and corrected before administration of the examination material.

4OA6 Meetings (Including Exit Meeting)

.1 Exit Meeting Summary

The inspectors presented preliminary examination observations to Mr. Coyle and other members of licensee management on June 16, 2000. The licensee acknowledged the issues presented. No proprietary information was identified.

PARTIAL LIST OF PERSONS CONTACTED

Licensee

P. Berry, Assistant Director-Nuclear Training
M. Coyle, Plant Manager
V. Cwietniewicz, Director-Nuclear Training
J. Foreman, Licensing Specialist
W. Maguire, Director-Operations
J. Owens, Supervisor-Operations Training
L. Pickley, Senior Instructor, Operations
M. Reandeau, Director Licensing
P. Young, Senior Instructor, Operations

NRC

P. Louden, Senior Resident Inspector, Clinton Power Station
C. Brown, Resident Inspector, Clinton Power Station

ITEMS OPENED, CLOSED AND DISCUSSED

Opened

50-461/00301-01	NCV	Compromise of licensed operator initial examination material

Closed

50-461/00301-01	NCV	Compromise of licensed operator initial examination material

Discussed

None

Enclosure 2

SIMULATION FACILITY REPORT

Facility Licensee: Clinton Power Station

Facility Licensee Docket No: 50-461

Operating Tests Administered: June 12–16, 2000

The following documents observations made by the NRC examination team during the initial operator license examination. These observations do not constitute audit or inspection findings and are not, without further verification and review, indicative of non-compliance with 10 CFR 55.45(b). These observations do not affect NRC certification or approval of the simulation facility other than to provide information which may be used in future evaluations. No licensee action is required in response to these observations.

During the conduct of the simulator portion of the operating tests, the following items were observed:

ITEM	DESCRIPTION

1. None

Enclosure 3

Written Examination and Answer Keys (RO/SRO)

This document will be available from ADAMS within 30 days under the title "Clinton Initial Examination 06/2000."

Facility: Clinton Power Station Date of Examination: June 12, 2000

Examinations Developed by: Facility / NRC (joint development)

Target Date*	Task Description / Reference	Chief Examiner's Initials
-180	1. Examination administration date confirmed (C.1.a; C.2.a & b)	drm
-120	2. NRC examiners and facility contact assigned (C.1.d; C.2.e)	drm
-120	3. Facility contact briefed on security & other requirements (C.2.c)	drm
-120	4. Corporate notification letter sent (C.2.d)	drm
[-90]	[5. Reference material due (C.1.e; C.3.c)]	drm
-75	6. Integrated examination outline(s) due (C.1.e & f; C.3.d)	drm
-70	7. Examination outline(s) reviewed by NRC and feedback provided to facility licensee (C.2.h; C.3.e)	n/a
-45	8. Proposed examinations, supporting documentation, and reference materials due (C.1.e, f, g & h; C.3.d)	n/a
-30	9. Preliminary license applications due (C.1.l; C.2.g; ES-202)	drm
-14	10. Final license applications due and assignment sheet prepared (C.1.l; C.2.g; ES-202)	drm
-14	11. Examination approved by NRC supervisor for facility licensee review (C.2.h; C.3.f)	drm
-14	12. Examinations reviewed with facility licensee (C.1.j; C.2.f & h; C.3.g)	drm
-7	13. Written examinations and operating tests approved by NRC supervisor (C.2.i; C.3.h)	drm
-7	14. Final applications reviewed; assignment sheet updated; waiver letters sent (C.2.g, ES-204)	drm
-7	15. Proctoring/written exam administration guidelines reviewed with facility licensee and authorization granted to give written exams (if applicable) (C.3.k)	drm
-7	16. Approved scenarios, job performance measures, and questions distributed to NRC examiners (C.3.i)	drm

* Target dates are keyed to the examination date identified in the corporate notification letter. They are for planning purposes and may be adjusted on a case-by-case basis in coordination with the facility licensee.

[ ] Applies only to examinations prepared by the NRC.

February 3, 2000

Mr. John P. McElwain
Chief Nuclear Officer
Clinton Power Station
Illinois Power Company
Mail Code V-275
P. O. Box 678
Clinton, IL 61727

SUBJECT: INITIAL OPERATOR LICENSE EXAMINATION

Dear Mr. McElwain:

In a telephone conversation on February 2, 2000, between Mr. John Owens of your staff and Mr. Dell McNeil, of the Region III Operations Branch, arrangements were made for the administration of licensing examinations at the Clinton Power Station the weeks of June 5 and 12, 2000. In addition, the NRC will make an examination validation visit to your facility the week of May 15, 2000.

The NRC will prepare the examinations based on the guidelines in Revision 8 of NUREG-1021, "Operator Licensing Examination Standards for Power Reactors." Your staff will be given the opportunity to review the examinations the week of May 15, 2000.

To meet the above schedule, it was necessary for your staff to furnish the reference materials identified in Attachment 2 of ES-201 in December 1999. Those materials were requested in an earlier telephone call and have already been submitted by your staff.

In order to conduct the requested written examinations and operating tests, it will be necessary for your staff to provide adequate space and accommodations in accordance with ES-402, and to make the simulation facility available on the dates noted above. In accordance with ES-302, your staff should retain the original simulator performance data (e.g., system pressures, temperatures, and levels) generated during the dynamic operating tests until the examination results are final.

Appendix E of NUREG-1021 contains a number of NRC policies and guidelines that will be in effect while the written examinations and operating tests are being administered.

To permit timely NRC review and evaluation, your staff should submit preliminary reactor operator and senior reactor operator license applications (Office of Management and Budget (OMB) approval number 3150-0090), medical certifications (OMB approval number 3150-0024), and waiver requests (if any) (OMB approval number 3150-0090) at least 30 days before the first examination date. If the applications are not received at least 30 days before the examination date, a postponement may be necessary. Signed applications certifying that all training has been completed should be submitted at least 14 days before the first examination date.

This letter contains information collections that are subject to the *Paperwork Reduction Act of 1995* (44 U.S.C. 3501 et seq.). These information collections were approved by the Office of Management and Budget, approval number 3150-0101, which expires on September 30, 2000.

The public reporting burden for this collection is estimated to average 50 hours per response, including the time for reviewing instructions, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments on any aspect of this collection of information, including suggestions for reducing the burden, to the Information and Records Management Branch (T-6 F33), U.S. Nuclear Regulatory Commission, Washington, D.C. 20555-0001, or by Internet electronic mail at BJS1@NRC.GOV; and to the Desk Officer, Office of Information and Regulatory Affairs, NEOB-10202, (3150-0101), Office of Management and Budget, Washington, D.C. 20503.

The NRC may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a currently valid OMB control number.

Thank you for your cooperation in this matter. Mr. Owens has been advised of the policies and guidelines referenced in this letter. If you have any questions regarding the NRC's examination procedures and guidelines, please contact Mr. Dell McNeil at (630) 829-9737, or me at 630-829-9733.

Sincerely,

Dell R. McNeil (for DEH)

David E. Hills, Chief
Operations Branch

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

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M. Aguilar, Assistant Attorney General
G. Stramback, Regulatory Licensing
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General Electric Company
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J. Owens, Operations Training Director

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J. B. Hopkins, LPM, NRR

cc: D. McNeil

September 8, 1999

Mr. John P. McElwain
Chief Nuclear Officer
Clinton Power Station
Illinois Power Company
Mail Code V-275
P. O. Box 678
Clinton, IL 61727

Dear Mr. McElwain:

Our letter of September 11, 1998, to J. V. Sipek tentatively scheduled initial examinations during the weeks of November 29 and December 6, 1999. However, after requests from Clinton management, we have tentatively re-scheduled the initial licensing examinations for your operator license applicants during the weeks of June 5 and 12, 2000. Validation of the examinations will occur at the station during the weeks of May 15, 2000. In the unlikely event that we are unable to support the examinations during the scheduled weeks, we will inform you immediately upon discovery of such conditions and make arrangements to administer the examination at a mutually acceptable date.

As previously agreed upon, your staff will develop the examination.

We understand you are training approximately 18 candidates for the examinations. Please inform us if the number of candidates declines below 10 as this will impact the examination schedule. Please also inform us at your earliest opportunity if you discover you are unable to support the examination on the scheduled dates.

A supplementary letter will be sent to the training department approximately 120 days prior to the examination outlining examination security expectations, listing the materials required by the NRC to conduct the examination, reconfirming the examination dates, and reconfirming the number of candidates you have in the training program. If you have any questions concerning this information, please contact Mary Ann Bies of my staff at 630-829-9711.

Sincerely,

/s/ David E. Hills

David E. Hills, Chief
Operations Branch

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

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R. Phares, Manager, Nuclear Safety
and Performance Improvement
M. Aguilar, Assistant Attorney General
G. Stramback, Regulatory Licensing
Services Project Manager
General Electric Company
Chairman, DeWitt County Board
State Liaison Officer
Chairman, Illinois Commerce Commission
V. J. Cwietniewicz, Training Department

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M. A. Bies, DRS

September 11, 1998

Mr. Joseph V. Sipek
Director-Licensing
Illinois Power Company
Clinton Power Station
P.O. Box 678
Clinton, IL 61727

Dear Mr. Sipek

In response to your letter dated June 18, 1998, we have tentatively scheduled an initial licensing examination for your operator license applicants during the weeks of November 29, and December 6, 1999. Validation of the examination will occur at the station during the week of November 15, 1999. In the unlikely event that we are unable to support the examination during the scheduled weeks, we will inform you immediately upon discovery of such conditions and make arrangements to administer the examination at a mutually acceptable date.

Your letter indicated you are training approximately 15-17 candidates for the examination. Please inform us if the number of candidates declines below 10 as this will impact the examination schedule. Please also inform us at your earliest opportunity if you discover you are unable to support the examination on the scheduled dates.

A supplementary letter will be mailed to the training department approximately 120 days prior to the examination outlining examination security expectations, listing the materials required by the NRC to conduct the examination, reconfirming the examination dates, and reconfirming the number of candidates you have in the training program. If you have any questions concerning this information please contact Mr. Dell McNeil at 630-829-9737 or me at 630-829-9705.

Sincerely,

Original /s/ M. Bielby for

Melvyn N. Leach, Chief
Operator Licensing Branch

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

cc: J. Hanson, Training Department

bcc: M. Bies, DRS

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A.M. Stone

Illinois Power Company
Clinton Power Station
P.O. Box 678
Clinton, IL 61727
Tel 217 935-8881

Joseph V. Sipek
Director - Licensing

ILLINOIS POWER
An Illinova Company

U-603019
1A.120

June 18, 1998

Mr. Carl J. Paperiello
Regional Administrator
Region III
U. S. Nuclear Regulatory Commission
801 Warrenville Road
Lisle, Illinois 60532-4351

Subject: Clinton Power Station Request for
Senior Reactor Operator and Reactor Operator Exam

Dear Mr. Paperiello

Pursuant to 10 CFR 55.41 and 55.43, this letter is to request an Initial Licensing Examination to be conducted in November 1999, at Clinton Power Station. The number of candidates will be six Reactor Operator License candidates, two upgrades to Senior Reactor Operator Licenses, and seven to ten Senior Reactor Operator Licenses.

If you have any questions or comments on the above, please contact Mr. Doug Antonelli at (217) 935-8881 extension 3120.

Sincerely yours,

Joseph V. Sipek
Director - Licensing

BGS/mlh

cc: NRC Clinton Licensing Project Manager
NRC Resident Office, V-690
Document Control Desk

JUN 22 1998

NUCLEAR TRAINING AND SUPPORT DEPARTMENT TRAINING PROGRAM
NRC EXAMINATION SECURITY AGREEMENT

Clinton Initial Examination (06/2000)

Pre-examination

I acknowledge that I have acquired specialized knowledge about the NRC licensing examination scheduled for the week(s) of 6/5/00 - 6/16/00 as of the date of my signature. I agree that I will not knowingly divulge any information about these examinations to any persons who have not been authorized by the NRC chief examiner. I understand that I am not to participate in any instruction, evaluation, or other training-related activities involving those applicants scheduled to be administered these licensing examinations from this date until completion of examination administration. I further understand that violation of the conditions of this agreement may result in cancellation of the examinations and/or an enforcement action against me or the facility licensee. I will immediately report to facility management or the NRC chief examiner any indications or suggestions security may have been compromised.

Post-examination

To the best of my knowledge, I did not divulge to any unauthorized persons any information concerning the NRC licensing examinations administered during the week(s) of 6/12 - 6/17/00. From the date that I entered into this security agreement until the completion of examination administration, I did not participate in any training-related activities involving those applicants who were administered these licensing examinations.

Signature below indicates compliance with the appropriate pre or post examination agreement statement

Name	Pre-examination		Post-examination	
Printed or Typed	Signature	Date	Signature	Date
D.R. CLINES	DR Clines	1/4/00	DR Clines	6/28/00
P.T. Young	PT Young	1/11/00	PT Young	6/19/00
J. PINKERTON	[illegible]	4/24/00	[illegible]	6/19/00
Nicholas T. Pope	Nicholas T. Pope	4/28/00	Nicholas T. Pope	6-19-00
TOM PICKLEY	[illegible]	5/22/00	[illegible]	6/19/00
Chad Pond	Chad Pond	5/22/00	Chad Pond	6-19-00
Mike Tindell	Mike Tindell	5/22/00	Mike Tindell	6-19-00
Tom Sibley	[illegible]	5/22/00	[illegible]	6-19-00
Joseph Crump	Joseph Crump	5/22/00	Joseph Crump	6-29-00
Charles W Corley	Charles W Corley	5/22/00	Charles W Corley	6-28-00
Tony D. JENNINGS	Tony D Jennings	5/22/00	Tony D Jennings	6/28/00
R L Price	[illegible]	5/22/00	[illegible]	6/19/00
Terrance E. Long	Terrance E Long	5/22/00	Terrance E Long	6/19/00
JEFFREY L HANSEN	Jeffrey L. Hansen	5/25/00	[illegible]	[illegible]
E E TIEDEMANN	E E Tiedemann	5/26/00	E E Tiedemann	6-19-00
JOSEPH SMITH	[illegible]	5/27/00	[illegible]	6/19/00

TF-061 (12/97)

JUL 2 8 2000

NUCLEAR TRAINING AND SUPPORT DEPARTMENT TRAINING PROGRAM
NRC EXAMINATION SECURITY AGREEMENT

Pre-examination Clinton Initial Examination (06/2000)

I acknowledge that I have acquired specialized knowledge about the NRC licensing examination scheduled for the week(s) of 6/12 — 6/17/00 as of the date of my signature. I agree that I will not knowingly divulge any information about these examinations to any persons who have not been authorized by the NRC chief examiner. I understand that I am not to participate in any instruction, evaluation, or other training-related activities involving those applicants scheduled to be administered these licensing examinations from this date until completion of examination administration. I further understand that violation of the conditions of this agreement may result in cancellation of the examinations and/or an enforcement action against me or the facility licensee. I will immediately report to facility management or the NRC chief examiner any indications or suggestions security may have been compromised.

Post-examination

To the best of my knowledge, I did not divulge to any unauthorized persons any information concerning the NRC licensing examinations administered during the week(s) of 6/12 – 6/17/00. From the date that I entered into this security agreement until the completion of examination administration, I did not participate in any training-related activities involving those applicants who were administered these licensing examinations.

Signature below indicates compliance with the appropriate pre or post examination agreement statement

Name	Pre-examination		Post-examination	
Printed or Typed	Signature	Date	Signature	Date
FRED PERRYMAN	[signature]	6-5-00	[signature]	6-19-00
Keith Deck	[signature]	6/6/00	[signature]	7/17/00
PAUL HIPPELY	[signature]	6/6/00	[signature]	7/17/00
Thomas A. Bauer	[signature]	6-14-00	[signature]	6-19-00

TF-061 (12/97)

JUL. 2 0 2000

Facility: Clinton Power Station Date of Exam: June 17, 2000 Exam Level: RO/SRO

Item Description	Initials a	Initials b	Initials c
1. Answer key changes and question deletions justified and documented	AMS		SM
2. Applicants' scores checked for addition errors (reviewers spot check > 25% of examinations)	AMS		SM
3. Grading for all borderline cases (80% +/- 2%) reviewed in detail	n/a	n/a	n/a
4. All other failing examinations checked to ensure that grades are justified	n/a	n/a	n/a
5. Performance on missed questions checked for training deficiencies and wording problems; evaluate validity of questions missed by half or more of the applicants	AMS		SM

	Printed Name / Signature	Date
a. Grader	AnMarie Stone / AnMarie Stone	7/3/00
b. Facility Reviewer(*)	n/a	n/a
c. NRC Chief Examiner (*)	Dell R. McNeal / Dell R. McNeal	07/03/00
d. NRC Supervisor (*)	David Hills / David Hills	7/14/00

(*) The facility reviewer's signature is not applicable for examinations graded by the NRC; two independent NRC reviews are required.

NRC Outline Submittal

Contains the following:

ES-201-2	Examination Outline Quality Checklist
ES-301-1	Administrative Topics Outline (RO)
ES-301-1	Administrative Topics Outline (SRO)
ES-301-2	Control Room Systems and Facility Walk-Through Test Outline (RO)
ES-301-2	Control Room Systems and Facility Walk-Through Test Outline (SRO(U))
ES-301-4	Simulator Scenario Quality Checklist
ES-301-5	Transient and Event Checklist
ES-D-1	Appendix D, Scenario Outline #1
ES-D-1	Appendix D, Scenario Outline #2
ES-D-1	Appendix D, Scenario Outline #3
ES-401-1	BWR SRO Examination Outline
ES-401-5	Generic Knowledge and Abilities Outline (Tier 3) (SRO)
ES-401-2	BWR RO Examination Outline
ES-401-5	Generic Knowledge and Abilities Outline (Tier 3) (RO)

Facility: Clinton Power Station | Date of Examination: 06/05/00

Item	Task Description	Initials a	Initials b*	Initials c
1. WRITTEN	a. Verify that the outline(s) fit(s) the appropriate model per ES-401.	JH AMS	N/A	BCW
	b. Assess whether the outline was systematically prepared and whether all knowledge and ability categories are appropriately sampled.	JH AMS	N/A	BCW
	c. Assess whether the outline over-emphasizes any systems, evolutions, or generic topics.	JH AMS	N/A	BCW
	d. Assess whether the repetition from previous examination outlines is excessive.	JH AMS	N/A	BCW
2. SIM	a. Using Form ES-301-5, verify that the proposed scenario sets cover the required number of normal evolutions, instrument and component failures, and major transients.	JH AMS	N/A	BCW
	b. Assess whether there are enough scenario sets (and spares) to test the projected number and mix of applicants in accordance with the expected crew composition and rotation schedule without compromising exam integrity; ensure each applicant can be tested using at least one new or significantly modified scenario, that no scenarios are duplicated from the applicants' audit test(s)*, and scenarios will not be repeated over successive days.	JH AMS	N/A	BCW
	c. To the extent possible, assess whether the outline(s) conform(s) with the qualitative and quantitative criteria specified on Form ES-301-4 and described in Appendix D.	JH AMS	N/A	BCW
3. W/T	a. Verify that: (1) the outline(s) contain(s) the required number of control room and in-plant tasks, (2) no more than 30% of the test material is repeated from the last NRC examination, (3)* no tasks are duplicated from the applicants' audit test(s), and (4) no more than 80% of any operating test is taken directly from the licensee's exam banks.	JH AMS	N/A	BCW
	b. Verify that: (1) the tasks are distributed among the safety function groupings as specified in ES-301, (2) one task is conducted in a low-power or shutdown condition, (3) 40% of the tasks require the applicant to implement an alternate path procedure, (4) one in-plant task tests the applicant's response to an emergency or abnormal condition, and (5) the in-plant walk-through requires the applicant to enter the RCA.	JH AMS	N/A	BCW
	c. Verify that the required administrative topics are covered, with emphasis on performance-based activities.	JH AMS	N/A	BCW
	d. Determine if there are enough different outlines to test the projected number and mix of applicants and ensure that no items are duplicated on successive days.	JH AMS	N/A	BCW
4. GENERAL	a. Assess whether plant-specific priorities (including PRA and IPE insights) are covered in the appropriate exam section.	JH AMS	N/A	BCW
	b. Assess whether the 10 CFR 55.41/43 and 55.45 sampling is appropriate.	JH AMS	N/A	BCW
	c. Ensure that K/A importance ratings (except for plant-specific priorities) are at least 2.5.	JH AMS	N/A	BCW
	d. Check for duplication and overlap among exam sections.	JH AMS	N/A	BCW
	e. Check the entire exam for balance of coverage.	JH AMS	N/A	BCW
	f. Assess whether the exam fits the appropriate job level (RO or SRO).	JH AMS	N/A	BCW

	Printed Name / Signature	Date
a. Author	Jay Hopkins / Ann Marie Stone	2/22/00 2/22/00
b. Facility Reviewer(*)	N/A	N/A
c. Chief Examiner	Dell R. McNeil / Dell R. McNeil	02/23/00
d. NRC Supervisor	David E. Hills / David E. Hills	2/27/00

(*) Not applicable for NRC-developed examinations.

Facility: Clinton Power Station
Date of Examination: 06/05/00
Examination Level (circle one): (RO) / SRO
Operating Test Number: 2000301

Administrative Topic/Subject Description		Describe method of evaluation: 1. ONE Administrative JPM, OR 2. TWO Administrative Questions
A.1	Conduct of Operations Shift Turnover	JPM - Perform Panel Walkdown for shift turnover. Identify (5) discrepancies.
	Conduct of Operations Plant Parameter Verification	JPM - Calculate RCS Leakrate without Computer
A.2	Equipment Control Tagouts	JPM - Identify valves on P&ID to isolate RWCU pump due to pump packing leak.
A.3	Radiation Control Calculating Personnel Exposure	Identify the dose rate the operator would receive hanging the tags on valves in the RWCU pump room.
A.4	Emergency Plan Evacuate Containment	JPM - Sound the Containment Evacuation Alarm and Make Plant Announcement from Outside of the Main Control Room

Facility: Clinton Power Station
Date of Examination: 06/05/00
Examination Level (circle one): RO / SRO
Operating Test Number: 2000301

Administrative Topic/Subject Description		Describe method of evaluation: 1. ONE Administrative JPM, OR 2. TWO Administrative Questions
A.1	Conduct of Operations Night/Standing Orders	Question: Determine if a Night Order/Standing Order is still current.
		Question: How is information added to the Night/Standing Orders?
	Conduct of Operations Fuel Handling	JPM - Determine if fuel loading can continue with a source range nuclear instrument out of service.
A.2	Equipment Control Tagouts	JPM - Verify the RWCU pump isolation boundary tagout for leaking pump packing is adequate. (There will be at least one error in the tagout package.)
A.3	Radiation Control Liquid Rad Waste Discharge Permit	JPM - Review & Approve Liquid Rad Waste Discharge Permit. (There will be at least one error)
A.4	Emergency Plan Make PARs	JPM - Make EP Protective Action Recommendations (PARs) after Scenario #1.

Facility: CLINTON POWER STATION
Exam Level (circle one): (RO) / SRO(I) / SRO(U)

Date of Examination: 06/05/00
Operating Test No.: 2000301

B.1 Control Room Systems

	System / JPM Title	Type Code*	Safety Function
a.	RPIS/Simulate Bypassing an RPI in the Control Room	(C)(D)	7
b.	EDG/Parallel and Load DG 1A to Offsite Power for PMT	(S)(D)	6
c.	CRDM/Identify and Correct an Uncoupled Rod	(S)(N)(A)	1
d.	RCIC/Manually Start up RCIC	(S)(D)(A)	2
e.	RHR/Shift From RHR SDC to RWCU DHR	(S)(L)(N)	4
f.	LPCI/Manually Shutdown CTMT Spray w/ Initiation Signal Present	(S)(D)(A)	5
g.	HVAC/Restart Fuel Bldg Vent after Isolation on Hi Rad	(S)(N)	9

B.2 Facility Walk-Through

a.	DC Elec Dist/Shed DC Loads in Plant after SBO	(R)(N)	6
b.	Fire Protection/Locally Start the Diesel Driven Fire Pump	(D)(A)	8
c.	ADS/Manually Valve in ADS Backup Air Bottles	(R)(D)	3

* Type Codes: (D)irect from bank, (M)odified from bank, (N)ew, (A)lternate path, (C)ontrol room, (S)imulator, (L)ow-Power, (R)CA

Facility: CLINTON POWER STATION
Exam Level (circle one): RO / SRO(I) / SRO(U)

Date of Examination: 06/05/00
Operating Test No.: 2000301

B.1 Control Room Systems

System / JPM Title	Type Code*	Safety Function
a.		
b. EDG/Parallel and Load DG 1A to Offsite Power for PMT	(S)(D)	6
c.		
d. n/a		
e. RHR/Shift From RHR SDC to RWCU DHR	(S)(L)(N)	4
f. LPCI/Manually Shutdown CTMT Spray w/ Initiation Signal Present	(S)(D)(A)	5
g.		

B.2 Facility Walk-Through

a. n/a		
b. Fire Protection/Locally Start the Diesel Driven Fire Pump	(D)(A)	8
c. ADS/Manually Valve in ADS Backup Air Bottles	(R)(D)	3

* Type Codes: (D)irect from bank, (M)odified from bank, (N)ew, (A)lternate path, (C)ontrol room, (S)imulator, (L)ow-Power, (R)CA

Facility: Clinton Power Station Date of Exam: 06/05/00 Scenario Numbers: 1 / 2 / 3 Operating Test No.: 2000301

QUALITATIVE ATTRIBUTES	Initials a	Initials b	Initials c
1. The initial conditions are realistic, in that some equipment and/or instrumentation may be out of service, but it does not cue the operators into expected events.			
2. The scenarios consist mostly of related events.			
3. Each event description consists of · the point in the scenario when it is to be initiated · the malfunction(s) that are entered to initiate the event · the symptoms/cues that will be visible to the crew · the expected operator actions (by shift position) · the event termination point (if applicable)			
4. No more than one non-mechanistic failure (e.g., pipe break) is incorporated into the scenario without a credible preceding incident such as a seismic event.			
5. The events are valid with regard to physics and thermodynamics.			
6. Sequencing and timing of events is reasonable, and allows the examination team to obtain complete evaluation results commensurate with the scenario objectives.			
7. If time compression techniques are used, the scenario summary clearly so indicates. Operators have sufficient time to carry out expected activities without undue time constraints. Cues are given.			
8. The simulator modeling is not altered.			
9. The scenarios have been validated. Any open simulator performance deficiencies have been evaluated to ensure that functional fidelity is maintained while running the planned scenarios.	@	@	
10. Every operator will be evaluated using at least one new or significantly modified scenario. All other scenarios have been altered in accordance with Section D.4 of ES-301.			
11. All individual operator competencies can be evaluated, as verified using Form ES-301-6 (submit the form along with the simulator scenarios).		*	
12. Each applicant will be significantly involved in the minimum number of transients and events specified on Form ES-301-5 (submit the form with the simulator scenarios).			
13. The level of difficulty is appropriate to support licensing decisions for each crew position.			

TARGET QUANTITATIVE ATTRIBUTES (PER SCENARIO; SEE SECTION D.4.D)	Actual Attributes	--	--	--
1. Total malfunctions (5-8)	6 / 8 / 8			
2. Malfunctions after EOP entry (1-2)	1 / 3 / 3			
3. Abnormal events (2-4)	2 / 2 / 2			
4. Major transients (1-2)	1 / 1 / 1			
5. EOPs entered/requiring substantive actions (1-2)	1 / 1 / 1			
6. EOP contingencies requiring substantive actions (0-2)	1 / 1 / 1			
7. Critical tasks (2-3)	2 / 2 / 3			

* UNCLEAR AS TO WHETHER SCENARIO 1, SRO REFERENCE TO THE ODCM IN EVENT 5 IS SUFFICIENT TO EVALUATE "COMPLY WITH TECH SPEC" COMPETENCY.

+ Scenario 1, Event 5 changed 5/12/00

@ Scenarios validated 6/5/2000, Scenario 3 deleted - not needed.

OPERATING TEST NO.: 2000301

Applicant Type	Evolution Type	Minimum Number	Scenario Number		
			1	2	3 ~~4~~
RO	Reactivity	1	1,7	1,6	6
	Normal	1	2	2	1
	Instrument	2	3,4	3,4	3,4,5
	Component	2	5,6,8,9, 10, 12	5,7,9, 10,11	2,7,9, 10,11
	Major	1	11	9 ~~8~~	8
As RO	Reactivity	1	1,7	1,6	6
	Normal	0			
	Instrument	1	3	3	3
	Component	1	10	7	2,7
	Major	1	11	9 ~~8~~	8
SRO-I					
As SRO	Reactivity	0	1,7	1,6	6
	Normal	1	2	2	6
	Instrument	1	3,4	3,4	3,4,5
	Component	1	5,6,8,9, 10,12	5,7,9, 10,11	2,7,9, 10,11
	Major	1	11	9 ~~8~~	8
SRO-U	Reactivity	0	1,7	1,6	6
	Normal	1	2	2	6
	Instrument	1	3,4	3,4	3,4,5
	Component	1	5,6,8,9, 10,12	5,7,9, 10,11	2,7,9, 10,11
	Major	1	11	9 ~~8~~	8

Instructions:
(1) Enter the operating test number and Form ES-D-1 event numbers for each evolution type.
(2) Reactivity manipulations may be conducted under normal or *controlled* abnormal conditions (refer to Section D.4.d) but must be significant per Section C.2.a of Appendix D.

Author: Jay Hopkins / Ann Marie Stone

Chief Examiner: Scott R. McNeil

Facility: CLINTON POWER STATION Scenario No.: 01 Op-Test No.: 2000301

Examiners: _____ Operators: _____

Objectives: Evaluate applicants while: 1) reducing power with FCVs, 2) conducting MSIV stroke testing, 3) responding to an APRM channel upscale failure, 4) responding to a main turbine lube oil temperature controller failure causing high lube oil temperatures, 5) responding to an Offgas Post-Treatment radiation monitor failure (high), 6) responding to a loss of operating service air compressor with a small instrument air leak, 7) reducing power due to the instrument air leak, 8) responding to a CRD FCV failing shut, 9) responding to one MSIV drifing off the full open seat, 10) responding to drifting rods, and 11) responding to an ATWS.

Initial Conditions: 100% power, NOP, NOT, EOC (150 days of continuous operation)

Turnover: Unit is at 100% power. Div I DG is OOS - maintenance is replacing a leaking relief valve on the air start system. It has been out of service for 1 day and is expected to be tested during this shift. The MDRFP is OOS - motor bearing replacement. Operators are shuffling fuel in the spent fuel pool. Shift instruction - Conduct CPS No. 9031.10, MSIV Stroke Test, immediately after assuming the shift. Operators are standing by to support the surveillance.

Event No.	Malf. No.	Event Type*	Event Description
1		R	Reduce power to 80%
2		N	Conduct MSIV stroke test (CPS No. 9031.01)
3		I	APRM Channel fails upscale
4		I	Main turbine lube oil temperature controller failure causes high lube oil temperature
5		C	Offgas Post-Treatment rad monitor fails high
6		C	Loss of Operating SA Compressor & small IA leak
7		R	Reduce power due to IA leak
8		C	CRD Auto Flow Control Valve fails shut
9		C	One MSIV drifts off full open seat due to IA leak
10		C	Rod drift due to IA leak
11		M	ATWS - Hydraulic lock
12		C	SLC fails to inject

* (N)ormal, (R)eactivity, (I)nstrument, (C)omponent, (M)ajor

Facility: CLINTON POWER STATION Scenario No.: 02 Op-Test No.: 2000301

Examiners: _____ Operators: _____

Objectives: Evaluate applicants while: 1) shifting recirculation pumps to fast speed, 2) conducting HPCS surveillance, 3) responding to a FWLCS setpoint setdown logic failure, 4) responding to a HPCS pump discharge pressure instrument for mini flow valve failure, 5) responding to a LPCS water leg pump leak, 6) reducing power due to a TS shutdown, 7) responding to a recirc flow control valve drifting in the open direction, 8) responding to an MSIV closure signal, 9) responding to two SRVs failing to close 10) responding to a RCIC overspeed trip during auto start, and 11) Emergency Depressurizing without ADS

Initial Conditions: 36% power, NOP, NOT, EOC (150 days of continuous operation)

Turnover: Unit is at 36% power. Div I DG is OOS - maintenance is replacing a leaking relief valve on the air start system. It has been out of service for 1 day and is expected to be tested during this shift. The MDRFP is OOS - motor bearing replacement. Operators are shuffling fuel in the spent fuel pool. Shift instruction - Shift recirc pump to fast speed, stabilize reactor power. Conduct CPS No. 2801.00D002, HPCS Surveillance, (tank to tank). Engineering identified a potential problem with HPCS flow data during last surveillance and wants to re-verify the data. Operators are standing by to support the surveillance.

Event No.	Malf. No.	Event Type*	Event Description
1		R	Shift recirculation pumps to fast speed
2		N	HPCS Surveillance (tank to tank) CPS 2801.00D002
3		I	FWLCS setpoint setdown logic fails, causing it to actuate
4		I	HPCS pump discharge pressure instrument for mini flow valve (F012 fails high. Valve remains open when pump is secured
5		C	LPCS/RHR-A water leg pump failure
6		R	Reduce reactor power due to TS shutdown requirement
7		C	Recirc flow control valve failure
8		M	MSIV closure
9		C	Two SRVs fail to close after opening
10		C	RCIC overspeed trip after auto start
11		C	Emergency Depressurization w/o ADS

* (N)ormal, (R)eactivity, (I)nstrument, (C)omponent, (M)ajor

Facility: CLINTON POWER STATION Scenario No.: 03 Op-Test No.: 2000301

Examiners: _____ Operators: _____

Objectives: Evaluate applicants while: 1) performing an EDG monthly run surveillance, 2) responding to a slow loss of condenser vacuum, 3) responding to an RPV level instrument failure, 4) responding to an upscale failure of the control room HVAC rad monitor 5) responding to a loss of both trains of RPS, 6) performing a reduction in reactor power, 7) responding to a trip of one of the running TDRFPs, 8) responding to a feedwater line break inside containment, 9) responding to a failure of NSSS to isolate the main feedwater lines, 10) responding to a failure of the SLC system to automatically initiate, and 11) responding to a reduced HPCS flow (100 gpm)

Initial Conditions: 100% power, NOP, NOT, EOC (150 days of continuous operation)

Turnover: Unit is at 100% power. Div I DG has been returned to service after replacing a leaking relief valve on the air start system. It was out of service for 2 days and is being post maintenance tested during this shift. (monthly run surveillance) The MDRFP is OOS - motor bearing replacement. Operators are shuffling fuel in the spent fuel pool. Shift instruction - A half-scram has occurred on channel A12 hours ago. I&C has ben investigating the cause of the half-scram. When I&C determines the cause, they will put together a work package to fix the system. Complete the EDG run test, maintain the plant per load dispatcher directions.

Event No.	Malf. No.	Event Type*	Event Description
1		N	Monthly run surveillance on the Div I EDG
2		C	Loss of main condenser vacuum
3		I	RPV level instrument fails high
4		I	Control Room HVAC rad monitor fails high
5		I	Failure of remaining RPS channel
6		R	Reduction in reactor power
7		C	Trip of running main feedwater pump
8		M	Feedwater line break inside containment w/ ATWS
9		C	Failure of feed line block isolation valves to shut
10		C	Failure of SLC to auto initiate
11		C	HPCS restricted flow failure (100gpm)

* (N)ormal, (R)eactivity, (I)nstrument, (C)omponent, (M)ajor

Facility: Clinton Power Station Date of Exam: 05/15/00 Exam Level: SRO

Tier	Group	K/A Category Points											Point Total
		K 1	K 2	K 3	K 4	K 5	K 6	A 1	A 2	A 3	A 4	G *	
1. Emergency & Abnormal Plant Evolutions	1	3	5	6				4	6			2	26
	2	2	3	3				3	4			2	17
	Tier Totals	5	8	9				7	10			4	43
2. Plant Systems	1	2	2	3	2	2	2	2	2	2	2	2	23
	2	1	1	1	2	1	1	1	2	1	1	1	13
	3	0	0	1	1	0	0	0	0	0	1	1	4
	Tier Totals	3	3	5	5	3	3	3	4	3	4	4	40

3. Generic Knowledge and Abilities	Cat 1	Cat 2	Cat 3	Cat 4	17
	5	5	4	3	

Note:
1. Ensure that at least two topics from every K/A category are sampled within each tier (i.e., the "Tier Totals" in each K/A category shall not be less than two).
2. Actual point totals must match those specified in the table.
3. Select topics from many systems; avoid selecting more than two or three K/A topics from a given system unless they relate to plant-specific priorities.
4. Systems/evolutions within each group are identified on the associated outline.
5. The shaded areas are not applicable to the category/tier.
6.* The generic K/As in Tiers 1 and 2 shall be selected from Section 2 of the K/A Catalog, but the topics must be relevant to the applicable evolution or system.
7. On the following pages, enter the K/A numbers, a brief description of each topic, the topics' importance ratings for the RO license level, and the point totals for each system and category. K/As below 2.5 should be justified on the basis of plant-specific priorities. Enter the tier totals for each category in the table above.

Emergency and Abnormal Plant Evolutions - Tier 1/Group 1

E/APE # / Name / Safety Function	K1	K2	K3	A1	A2	G	K/A Topic(s)	Imp.	Points
295003 Partial or Complete Loss of AC Pwr / 6			06	02			Reason for Containment Isolation with a loss of AC **[SRO ONLY]** Ability to operate/monitor EDG as applied to loss of AC	3.7/ 4.3	2.0
295006 SCRAM / 1		04					Turbine trip logic	3.7	1.0
295007 High Reactor Pressure / 3		05					Shutdown cooling	3.1	1.0
295009 Low Reactor Water Level / 2						x	2.4.3 Ability to identify post-accident instrumentation	3.5	1.0
295010 High Drywell Pressure / 5			01		02		Drywell venting / Interpret Drywell pressure **[SRO ONLY]**	3.9/ 4.0	2.0
295013 High Suppression Pool Temp. / 5					02	x	Ability to determine suppression pool localized heating/stratification **[SRO ONLY]** 2.4.22 Knowledge of bases for prioritizing safety functions /	3.5/ 4.0	2.0
295014 Inadvertent Reactivity Addition / 1	06						Abnormal reactivity additions	3.9	1.0
295015 Incomplete SCRAM / 1					01		Reactor power	4.3	1.0
295016 Control Room Abandonment / 7			03	02			Disabling Control Room controls **[SRO ONLY]** / Ability to operate/monitor/turbine pressure regulator system	3.7/ 3.1	2.0
295017 High Off-site Release Rate / 9		12					Interrelations between hi offsite release rate & SGTS	3.7	1.0
295023 Refueling Accidents Cooling Mode / 8		07					Interrelationship between SGTS & refueling accident	3.9	1.0
295024 High Drywell Pressure / 5	02			06			Containment building integrity **[SRO ONLY]** / Emergency generators	4.1/ 3.7	2.0
295025 High Reactor Pressure / 3					04		Suppression pool level	3.9	1.0
295026 Suppression Pool High Water Temp. / 5			02				Reason for pool cooling due to hi suppression pool temperature	4.0	1.0
295027 High Containment Temperature / 5					02		Determine containment pressure due to hi containment temperature	3.7	1.0
295030 Low Suppression Pool Water Level / 5				06			Ability to monitor/operate condensate storage & transfer system	3.4	1.0
295031 Reactor Low Water Level / 2	03		05				Water level effects on reactor power / Emergency depressurization	4.1/ 4.3	2.0
295037 SCRAM Condition Present and Power Above APRM Downscale or Unknown / 1			07				Various alternate methods of control rod insertion	4.1	1.0
295038 High Off-site Release Rate / 9					03		Interpret rad levels as applied to high off-site release	4.3	1.0
500000 High Containment Hydrogen Conc. / 5		03					Containment atmospheric control systems **[SRO ONLY]**	3.4	1.0
K/A Category Totals:	3	5	6	4	6	2	Group Point Total:		26

Emergency and Abnormal Plant Evolutions - Tier 1/Group 2

E/APE # / Name / Safety Function	K1	K2	K3	A1	A2	G	K/A Topic(s)	Imp.	Points
295001 Partial or Complete Loss of Forced Core Flow Circulation / 1 & 4						x	2.2.1 Ability to perform pre-start procedures	3.6	1.0
295002 Loss of Main Condenser Vacuum / 3									
295004 Partial or Total Loss of DC Pwr / 6			01				Reason for load shedding as applied to a loss of Vdc	2.6	1.0
295005 Main Turbine Generator Trip / 3		02					Relationship between feedwater temperature & main turbine trip **[SRO ONLY]**	3.0	1.0
295008 High Reactor Water Level / 2	01						Operational implication of moisture carryover due to high level	3.2	1.0
295011 High Containment Temperature / 5			01				Increased containment cooling due to high containment temperature	3.9	1.0
295012 High Drywell Temperature / 5		01					Interrelation between hi drywell temperature and high drywell ventilation	3.5	1.0
295018 Partial or Total Loss of CCW / 8					04		Ability to determine system flow on loss of CCW **[SRO ONLY]**	2.9	1.0
295019 Partial or Total Loss of Inst. Air / 8					02		Interpret status of safety related instrument air loads	3.7	1.0
295020 Inadvertent Cont. Isolation / 5 & 7				01			Ability to operate/monitor PCIS/NSSSS **[SRO ONLY]**	3.6	1.0
295021 Loss of Shutdown Cooling / 4						x	2.1.31 Ability to determine CR controls are in correct lineup **[SRO ONLY]**	3.9	1.0
295022 Loss of CRD Pumps / 1					01		Interpret/determine accumulator pressure w/ loss of CRD pumps	3.6	1.0
295028 High Drywell Temperature / 5									
295029 High Suppression Pool Water Level / 5	01						Implication of containment integrity due to high pool level	3.7	1.0
295032 High Secondary Containment Area Temperature / 5					01		Determine/interpret hi secondary containment area temperature	3.8	1.0
295033 High Secondary Containment Area Radiation Levels / 9				01			Operate/monitor area radiation monitoring system due to hi sec cont rad	4.0	1.0
295034 Secondary Containment Ventilation High Radiation / 9		06					Interrelation between PCIS & secondary containment ventilation hi rad	4.2	1.0
295035 Secondary Containment High Differential Pressure / 5				02			Ability to operate/monitor SRVs/FRVs **[SRO ONLY]**	3.8	1.0
295036 Secondary Containment High Sump/Area Water Level / 5									
600000 Plant Fire On Site / 8			04				Reasons for actions in AOPs for plant fire on site	3.4	1.0
K/A Category Point Totals:	2	3	3	3	4	2	Group Point Total:		17

System # / Name	K1	K2	K3	K4	K5	K6	A1	A2	A3	A4	G	K/A Topic(s)	Imp.	Points
201005 RCIS			02					09				Reactor Startup **[SRO ONLY]** / Predict impact of test display blinking	4.4/ 3.0	2.0
202002 Recirculation Flow Control				09								Min/max FCV position	3.4	1.0
203000 RHR/LPCI: Injection Mode										02		Operate sys valves	4.1	1.0
209001 LPCS			02									Loss of LPCS, effect on ADS logic	3.9	1.0
209002 HPCS		02										Knowledge of valve electrical power	2.9	1.0
211000 SLC							10					Monitor & predict changes in lights & alarms	3.7	1.0
212000 RPS				03								Prevent simultaneous multiple ac power	3.1	1.0
215004 Source Range Monitor											x	2.1.30 Ability to locate/operate components	3.4	1.0
215005 APRM / LPRM					05							Core flow effects on APRM trip setpoints **[SRO ONLY}**	3.6	1.0
216000 Nuclear Boiler Instrumentation								07				Reference leg flashing	3.5	1.0
217000 RCIC										07		Ability to operate/monitor Rx press w/ RCIC	3.8	1.0
218000 ADS		01										Electrical power supply to ADS logic	3.3	1.0
223001 Primary CTMT and Auxiliaries	05											Relationship between supp pool m/u & cont	3.5	1.0
223002 PCIS/Nuclear Steam Supply Shutoff	12											Connection between RCIS/NSSS & SGTS	3.3	1.0
226001 RHR/LPCI: CTMT Spray Mode						04						Loss of keep-fill system & effect	2.7	1.0
239002 SRVs			03									Ability to rapidly depressurize the reactor **[SRO ONLY]**	4.4	1.0
241000 Reactor/Turbine Pressure Regulator					03							Rx power vs. Rx pressure	3.6	1.0
259002 Reactor Water Level Control									06			Setpoint setdown after scram	3.0	1.0
261000 SGTS							07					Changes in SGTS temp during operations	2.9	1.0
262001 AC Electrical Distribution						02						Loss of offsite AC - effect on AC dist	3.9	1.0
264000 EDGs											x	2.1.33 Explain & apply sys limits & precautions	4.0	1.0
290001 Secondary CTMT									01			Monitor auto secondary containment iso	4.0	1.0
K/A Category Point Totals:	2	2	3	2	2	2	2	2	2	2	2	Group Point Total:		23

System # / Name	K1	K2	K3	K4	K5	K6	A1	A2	A3	A4	G	K/A Topic(s)	Imp.	Points
201001 CRD Hydraulic						03						Loss of SA & effects on CRDM **[SRO ONLY]**	2.9	1.0
201002 RMCS														
201004 RSCS														
201006 RWM														
202001 Recirculation		01										Recirc pump electrical power supplies	3.2	1.0
204000 RWCU								13				Signals which isolate system	3.4	1.0
205000 Shutdown Cooling				01								High temperature isolation	3.4	1.0
214000 RPIS	05											Full core display **[SRO ONLY]**	3.3	1.0
215002 RBM														
215003 IRM														
219000 RHR/LPCI: Torus/Pool Cooling Mode				10								Prevent leakage to environment thru Hx **[SRO ONLY]**	3.6	1.0
230000 RHR/LPCI: Torus/Pool Spray Mode														
234000 Fuel Handling Equipment							03					Changes in core reactivity during fuel handle	3.9	1.0
239003 MSIV Leakage Control														
245000 Main Turbine Gen. and Auxiliaries			08									Effect of loss of Rx/Turb pressure control	3.8	1.0
259001 Reactor Feedwater					03							TDRFP operation	2.8	1.0
262002 UPS (AC/DC)										01		xfer from alt to preferred source from C.R.	3.1	1.0
263000 DC Electrical Distribution														
271000 Offgas														
272000 Radiation Monitoring								10				Impact of LOCA on rad monitoring	4.1	1.0
286000 Fire Protection									01			Firewater pump start **[SRO ONLY]**	3.4	1.0
290003 Control Room HVAC														
300000 Instrument Air														
400000 Component Cooling Water											x	2.4.4 Recognize AOP entry condition	4.3	1.0
K/A Category Point Totals:	1	1	1	2	1	1	1	2	1	1	1	Group Point Total:		13

System # / Name	K1	K2	K3	K4	K5	K6	A1	A2	A3	A4	G	K/A Topic(s)	Imp.	Points
201003 Control Rod and Drive Mechanism											x	2.1.33 Recognize TS entry condition	4.0	1.0
215001 Traversing In-core Probe				01								Interlocks providing containment isolation	3.5	1.0
233000 Fuel Pool Cooling and Cleanup			01									Effect of loss of FPC on pool temp **[SRO ONLY]**	3.4	1.0
239001 Main and Reheat Steam										03		Monitor system flow in control room	3.5	1.0
256000 Reactor Condensate														
268000 Radwaste														
288000 Plant Ventilation														
290002 Reactor Vessel Internals														
K/A Category Point Totals:			1	1						1	1	Group Point Total:		4

Plant-Specific Priorities

System / Topic	Recommended Replacement for...	Reason	Points

Plant-Specific Priority Total (limit 10):

Facility: Clinton Power Station	Date of Exam: 05/15/00		Exam Level: SRO	
Category	K/A #	Topic	Imp.	Points
Conduct of Operations	2.1.3	Knowledge of shift turnover practices	3.4	1.0*
	2.1.11	Less than 1 hour TS action statements	3.8	1.0
	2.1.22	Ability to determine mode of operation	3.3	1.0
	2.1.29	How to conduct & verify valve lineups	3.3	1.0
	2.1.32	Ability to expain and apply system limits & prec.	3.8	1.0*
	2.1.			
	Total			5.0
Equipment Control	2.2.1	Ability to perform pre-startup procedures...	3.6	1.0*
	2.2.11	Controlling temporary changes	3.4	1.0
	2.2.13	Tagging & clearance procedures	3.8	1.0
	2.2.23	Ability to track LCOs	3.8	1.0
	2.2.30	Duties in control room during fuel handling	3.3	1.0*
	2.2.			
	Total			5.0
Radiation Control	2.3.1	10CFR20 & facility rad control requirements	3.0	1.0
	2.3.4	Knowledge of rad exposure limits/excess limits	3.1	1.0*
	2.3.9	Process for performing a containment purge	3.4	1.0
	2.3.11	Control radiation releases	3.2	1.0
	2.3.			
	2.3.			
	Total			4.0
Emergency Procedures/ Plan	2.4.4	Ability to recognize AOP/EOP conditions	4.3	1.0*
	2.4.24	Loss of cooling water procedures	3.7	1.0
	2.4.32	Operator response to loss of all annunciation	3.5	1.0
	2.4.			
	2.4.			
	2.4.			
	Total			3.0
Tier 3 Point Total (SRO)				17

*[SRO ONLY]

Facility: Clinton Power Station Date of Exam: 05/15/00 Exam Level: RO

Tier	Group	K/A Category Points											Point Total
		K 1	K 2	K 3	K 4	K 5	K 6	A 1	A 2	A 3	A 4	G *	
1. Emergency & Abnormal Plant Evolutions	1	3	3	3				1	2			1	13
	2	2	3	4				4	4			2	19
	3	0	1	1				0	1			1	4
	Tier Totals	5	7	8				5	7			4	36
2. Plant Systems	1	2	3	2	3	2	3	3	3	2	3	2	28
	2	1	1	2	2	2	2	1	2	2	2	2	19
	3	1	0	1	1	0	0	1	0	0	0	0	4
	Tier Totals	4	4	5	6	4	5	5	5	4	5	4	51

3. Generic Knowledge and Abilities	Cat 1	Cat 2	Cat 3	Cat 4	13
	4	4	3	2	

Note:
1. Ensure that at least two topics from every K/A category are sampled within each tier (i.e., the "Tier Totals" in each K/A category shall not be less than two).
2. Actual point totals must match those specified in the table.
3. Select topics from many systems; avoid selecting more than two or three K/A topics from a given system unless they relate to plant-specific priorities.
4. Systems/evolutions within each group are identified on the associated outline.
5. The shaded areas are not applicable to the category/tier.
6.* The generic K/As in Tiers 1 and 2 shall be selected from Section 2 of the K/A Catalog, but the topics must be relevant to the applicable evolution or system.
7. On the following pages, enter the K/A numbers, a brief description of each topic, the topics' importance ratings for the RO license level, and the point totals for each system and category. K/As below 2.5 should be justified on the basis of plant-specific priorities. Enter the tier totals for each category in the table above.

Emergency and Abnormal Plant Evolutions - Tier 1/Group 1

E/APE # / Name / Safety Function	K1	K2	K3	A1	A2	G	K/A Topic(s)	Imp.	Points
295005 Main Turbine Generator Trip / 3	01						Pressure effect on reactor power	4.0	1.0
295006 SCRAM / 1		04					Turbine trip logic	3.6	1.0
295007 High Reactor Pressure / 3		05					Shutdown cooling	2.9	1.0
295009 Low Reactor Water Level / 2						x	2.4.3 Ability to identify post-accident instrumentation	3.5	1.0
295010 High Drywell Pressure / 5			01				Drywell venting	3.8	1.0
295014 Inadvertent Reactivity Addition / 1	06						Abnormal reactivity additions	3.8	1.0
295015 Incomplete SCRAM / 1					01		Reactor power	4.1	1.0
295024 High Drywell Pressure / 5				06			Emergency generators	3.7	1.0
295025 High Reactor Pressure / 3					04		Suppression pool level	3.9	1.0
295031 Reactor Low Water Level / 2	03		05				Water level effects on reactor power / Emergency depressurization	3.7/ 4.2	2.0
295037 SCRAM Condition Present and Power Above APRM Downscale or Unknown / 1			07				Various alternate methods of control rod insertion	3.8	1.0
500000 High Containment Hydrogen Conc. / 5		02					Containment oxygen monitoring systems	3.1	1.0
K/A Category Totals:	3	3	3	1	2	1	Group Point Total:		13

Emergency and Abnormal Plant Evolutions - Tier 1/Group 2

E/APE # / Name / Safety Function	K1	K2	K3	A1	A2	G	K/A Topic(s)	Imp.	Points
295001 Partial or Complete Loss of Forced Core Flow Circulation / 1 & 4						x	2.2.1 Ability to perform pre-start procedures	3.7	1.0
295002 Loss of Main Condenser Vacuum / 3									
295003 Partial or Complete Loss of AC Pwr / 6				02			Ability to operate/monitor EDG as applied to loss of AC	4.2	1.0
295004 Partial or Complete Loss of DC Pwr / 6			01				Reason for load shedding as applied to loss of Vdc	2.6	1.0
295008 High Reactor Water Level / 2	01						Operational Implication of Moisture Carryover due to hi lvl	3.0	1.0
295011 High CTMT Temperature / 5			01				Increased containment cooling due to high containment temperature	3.6	1.0
295012 High Drywell Temperature / 5		01					Interrelation between hi drywell temperature and high drywell ventilation	3.4	1.0
295013 High Suppression Pool Temp. / 5						x	2.4.22 Knowledge of bases for prioritizing safety functions	3.0	1.0
295016 Control Room Abandonment / 7				02			Ability to operate/monitor reactor/turbine pressure regulator system	2.9	1.0
295017 High Off-site Release Rate / 9		12					Interrelations between hi offsite release rate & SGTS	3.4	1.0
295018 Partial or Complete Loss of CCW / 8									
295019 Part. or Comp. Loss of Inst. Air / 8					02		Interpret status of safety related instrument air loads	3.6	1.0
295020 Inadvertent Cont. Isolation / 5 & 7									
295022 Loss of CRD Pumps / 1					01		Interpret/determine accumulator pressure w/ loss of CRD pumps	3.5	1.0
295026 High Suppression Pool Water Temp. / 5			02				Reason for pool cooling due to hi suppression pool temperature	3.9	1.0
295027 High Containment Temperature / 5					02		Determine containment pressure due to hi containment temperature	3.7	1.0
295028 High Drywell Temperature / 5									
295029 High Suppression Pool Water Level / 5	01						Implication of containment integrity due to high pool level	3.4	1.0
295030 Low Suppression Pool Water Level / 5				06			Ability to monitor/operate condensate storage & transfer system	3.4	1.0
295033 High Sec. Cont. Area Rad. Levels / 9				01			Operate/monitor area radiation monitoring system due to hi sec cont rad	3.9	1.0
295034 Sec. Cont. Ventilation High Rad. / 9		06					Interrelation between PCIS & secondary containment ventilation hi rad	3.9	1.0
295038 High Off-site Release Rate / 9					03		Interpret rad levels as applied to high off-site release	3.5	1.0
600000 Plant Fire On Site / 8			04				Reasons for actions in AOPs for plant fire on site	2.8	1.0
K/A Category Point Totals:	2	3	4	4	4	2	Group Point Total:		19

Emergency and Abnormal Plant Evolutions - Tier 1/Group 3

E/APE # / Name / Safety Function	K1	K2	K3	A1	A2	G	K/A Topic(s)	Imp.	Points
295021 Loss of Shutdown Cooling / 4						x	2.1.28 Purpose/function of major systems & controls	2.8	1.0
295023 Refueling Accidents / 8		07					Interrelationship between SGTS & refueling accident	3.6	1.0
295032 High Secondary Containment Area Temperature / 5					01		Determine/interpret hi secondary containment area temperature	3.8	1.0
295035 Secondary Containment High Differential Pressure / 5			02				Reason for secondary containment ventilation response to sec cont hi d/p	3.3	1.0
295036 Secondary Containment High Sump/Area Water Level / 5									
K/A Category Point Totals:	0	1	1	0	1	1	Group Point Total:		4

System # / Name	K1	K2	K3	K4	K5	K6	A1	A2	A3	A4	G	K/A Topic(s)	Imp.	Points
201001 CRD Hydraulic			03									Loss of plant air systems & effects on CRDM	3.0	1.0
201005 RCIS								09	02			Predict impact of test display blinking / Ability to monitor rod display module lights	2.8/ 3.5	2.0
202002 Recirculation Flow Control				09								Min/max FCV position	3.3	1.0
203000 RHR/LPCI: Injection Mode						06				02		Loss of suppression pool/operate sys valves	3.8/ 4.1	2.0
209001 LPCS			02			01						Loss of LPCS, effect on ADS logic / Loss or malfunction of AC power & effect on LPCS	3.8/ 3.4	2.0
209002 HPCS		02										Knowledge of valve electrical power	2.8	1.0
211000 SLC							10					Monitor & predict changes in lights & alarms	3.7	1.0
212000 RPS				03								Prevent simultaneous multiple ac power	3.0	1.0
215003 IRM							05					Monitor changes to scrams & rod blocks	3.9	1.0
215004 SRM											x	2.1.30 Ability to locate/operate components	3.9	1.0
215005 APRM / LPRM				01								Rod blocks	3.7	1.0
216000 Nuclear Boiler Instrumentation								07				Reference leg flashing	3.4	1.0
217000 RCIC										07		Ability to operate/monitor Rx press w/ RCIC	3.9	1.0
218000 ADS		01				06						Electrical power supply to ADS logic / Loss of Vdc power & effect on ADS	3.1/ 3.4	2.0
223001 Primary CTMT and Auxiliaries	05											Relationship between supp pool m/u & cont	3.3	1.0
223002 PCIS/Nuclear Steam Supply Shutoff	12											Connection between RCIS/NSSS & SGTS	3.1	1.0
239002 SRVs		01										Electrical power supplies to SRVs	2.8	1.0
241000 Reactor/Turbine Pressure Regulator					03					05		Rx power vs. Rx pressure / Manually operate & monitor Mn Turbine Steam	3.5/ 3.3	2.0
259001 Reactor Feedwater					03							TDRFP operation	2.8	1.0
259002 Reactor Water Level Control									06			Setpoint setdown after scram	3.0	1.0
261000 SGTS							07					Changes in SGTS temp during operations	2.8	1.0
264000 EDGs								06			x	Impact of opening pwr supply brkrs/ 2.1.23 Explain & apply sys limits & precautions	3.4/ 3.4	2.0
K/A Category Point Totals:	2	3	2	3	2	3	3	3	2	3	2	Group Point Total:		28

System # / Name	K1	K2	K3	K4	K5	K6	A1	A2	A3	A4	G	K/A Topic(s)	Imp.	Points
201003 Control Rod and Drive Mechanism											x	2.1.33 Recognize TS entry condition	3.4	1.0
201004 RSCS														
201006 RWM														
202001 Recirculation		01										Electrical power supplies	3.2	1.0
204000 RWCU								13				Signals which isolate system	3.4	1.0
205000 Shutdown Cooling				01								High temperature isolation	3.4	1.0
214000 RPIS					01							Reed switch operation in RPIS	2.7	1.0
215002 RBM														
219000 RHR/LPCI: Torus/Pool Cooling Mode				08								Design features which provide NPSH	2.9	1.0
226001 RHR/LPCI: CTMT Spray Mode						04						Loss of keep-fill system & effect	2.7	1.0
230000 RHR/LPCI: Torus/Pool Spray Mode														
239001 Main and Reheat Steam										03		Monitor system flow in control room	3.5	1.0
245000 Main Turbine Gen. and Auxiliaries			08									Effect of loss of Rx/Turb pressure control	3.7	1.0
256000 Reactor Condensate														
262001 AC Electrical Distribution						02						Loss of offsite AC - effect on AC dist	3.6	1.0
262002 UPS (AC/DC)										01		xfer from alt to preferred source from C.R.	2.8	1.0
263000 DC Electrical Distribution					01							Implications of H_2 gen during battery charge	2.6	1.0
271000 Offgas							13					Monitor/predict changes in H_2	3.2	1.0
272000 Radiation Monitoring								10				Impact of LOCA on rad monitoring	3.9	1.0
286000 Fire Protection									04			Monitor auto system initiation	3.2	1.0
290001 Secondary CTMT									01			Monitor auto secondary containment iso	3.9	1.0
290003 Control Room HVAC			04									Loss of CR-HVAC & effect on CR pressure	2.8	1.0
300000 Instrument Air	02											Connection between service & instrument air	2.7	1.0
400000 Component Cooling Water											x	2.4.4 Recognize AOP entry condition	4.0	1.0
K/A Category Point Totals:	1	1	2	2	2	2	1	2	2	2	2	Group Point Total:		19

System # / Name	K1	K2	K3	K4	K5	K6	A1	A2	A3	A4	G	K/A Topic(s)	Imp.	Points
215001 Traversing In-core Probe				01								Interlocks providing containment isolation	3.4	1.0
233000 Fuel Pool Cooling and Cleanup	02											Relationship between RHR & fuel pool	2.9	1.0
234000 Fuel Handling Equipment							03					Changes in core reactivity during fuel handle	3.4	1.0
239003 MSIV Leakage Control			01									Loss of MSIV-LCS & effect on rad release	3.3	1.0
268000 Radwaste														
288000 Plant Ventilation														
290002 Reactor Vessel Internals														
K/A Category Point Totals:	1	0	1	1	0	0	1	0	0	0	0	Group Point Total:		4

Plant-Specific Priorities

System / Topic	Recommended Replacement for...	Reason	Points
Plant-Specific Priority Total: (limit 10)			

Facility: Clinton Power Station	Date of Exam: 05/15/00		Exam Level: RO	
Category	K/A #	Topic	Imp.	Points
Conduct of Operations	2.1.3	Knowledge of shift turnover practices	3.0	1.0
	2.1.11	Less than 1 hour TS action statements	3.0	1.0
	2.1.22	Ability to determine mode of operation	2.8	1.0
	2.1.29	How to conduct & verify valve lineups	3.4	1.0
	2.1.			
	2.1.			
	Total			4.0
Equipment Control	2.2.11	Controlling temporary changes	2.5	1.0
	2.2.13	Tagging & clearance procedures	3.6	1.0
	2.2.23	Ability to track LCOs	2.6	1.0
	2.2.30	Duties in control room during fuel handling	3.5	1.0
	2.2.			
	2.2.			
	Total			4.0
Radiation Control	2.3.1	10CFR20 & facility rad control requirements	2.6	1.0
	2.3.9	Process for performing a containment purge	2.5	1.0
	2.3.11	Control radiation releases	2.7	1.0
	2.3.			
	2.3.			
	2.3.			
	Total			3.0
Emergency Procedures/ Plan	2.4.32	Operator response to loss of all annunciation	3.3	1.0
	2.4.24	Loss of cooling water procedures	3.3	1.0
	2.4.			
	2.4.			
	2.4.			
	2.4.			
	Total			2.0
Tier 3 Point Total (RO)				13

NRC Submitted Operating Test & Written Examination

Contains the following:

ES-301-3	Operating Test Quality Checklist
ES-301-1	Administrative Topics Outline (RO) (Updated from Outline)
Admin JPMs	Admin JPMs (A.1 - A.4) (RO)
ES-301-1	Administrative Topics Outline (SRO) (Updated from Outline
Admin JPMs	Admin JPMs (A.1 - A.4) (SRO)
ES-301-2	Control Room Systems and Facility Walk-Through Test Outline (RO)
ES-301-2	Control Room Systems and Facility Walk-Through Test Outline (SRO(U))
OP JPMs	Operating JPMs (B.1.a - B.1.g, B.2.a - B.2.c) (RO/SRO(U))
ES-301-6	Competencies Checklist
ES-D-1	Appendix D, Scenario Outline #1
ES-D-2	Appendix D, Operator Actions #1
ES-D-1	Appendix D, Scenario Outline #2
ES-D-2	Appendix D, Operator Actions #2
ES-D-1	Appendix D, Scenario Outline #3
ES-D-2	Appendix D, Operator Actions #3
ES-401-7	Written Examination Quality Checklist (RO)
ES-401-7	Written Examination Quality Checklist (SRO)
ES-401-9	Written Examination Review Worksheet (Not retained, NRC developed written examination)

RO/SRO written examination with facility comments:

Questions 1-25	(only appear on the RO examination)
Questions 26-100	(appear on both (RO/SRO) examinations
Questions 101-125	(only appear on the SRO examination)

Facility: Clinton Power Station Date of Examination: June 06,2000 Operating Test Number: 2000301

	1. GENERAL CRITERIA	Initials a	Initials b	Initials c
a.	The operating test conforms with the previously approved outline; changes are consistent with sampling requirements (e.g., 10 CFR 55.45, operational importance, safety function distribution).	JH / AMS		SW
b.	There is no day-to-day repetition between this and other operating tests to be administered during this examination.	JH / AMS		SW
c.	The operating test shall not duplicate items from the applicants' audit test(s)(see Section D.1.a).	JH / AMS		N/A
d.	Overlap with the written examination and between operating test categories is within acceptable limits.	JH / AMS		SW
e.	It appears that the operating test will differentiate between competent and less-than-competent applicants at the designated license level.	JH / AMS		SW
	2. WALK-THROUGH (CATEGORY A & B) CRITERIA	--	--	--
a.	Each JPM includes the following, as applicable: · initial conditions · initiating cues · references and tools, including associated procedures · validated time limits (average time allowed for completion) and specific designation if deemed to be time critical by the facility licensee · specific performance criteria that include: - detailed expected actions with exact criteria and nomenclature - system response and other examiner cues - statements describing important observations to be made by the applicant - criteria for successful completion of the task - identification of critical steps and their associated performance standards - restrictions on the sequence of steps, if applicable	JH AMS		SW
b.	The prescripted questions in Category A are predominantly open reference and meet the criteria in Attachment 1 of ES-301.	JH / AMS		N/A
c.	Repetition from operating tests used during the previous licensing examination is within acceptable limits (30% for the walk-through) and do not compromise test integrity.	JH / AMS		SW
d.	At least 20 percent of the JPMs on each test are new or significantly modified.	JH / AMS		SW
	3. SIMULATOR (CATEGORY C) CRITERIA	--	--	--
a.	The associated simulator operating tests (scenario sets) have been reviewed in accordance with Form ES-301-4 and a copy is attached.	JH / AMS	N/A	SW

	Printed Name / Signature	Date
a. Author	J. Hopkins / Jay Hopkins / Ann Marie Stone / Ann Marie Stone	5/3/2000
b. ~~Facility~~ NRC Reviewer(*)	~~D. Patton~~ / Not Required	N/A
c. NRC Chief Examiner (*)	Scott R. McNeil / Scott R. McNeil	06/05/00 ~~5/17/2000~~
d. NRC Supervisor (*)	David E. Hills / David E. Hills	6/9/00

(*) The facility signature is not applicable for NRC-developed tests; two independent NRC reviews are required.

Authorization to validate: Scott R. McNeil 05/17/2000 David E. Hills 5-18-00

Chief Examiner Branch Chief

NRC SUBMITTED ADMINISTRATIVE JPMS

FOR CLINTON THE WEEK OF JUNE 12, 2000

Facility: Clinton Power Station
Date of Examination: 06/05/00
Examination Level (circle one): (RO) / SRO
Operating Test Number: 2000301

Administrative Topic/Subject Description		Describe method of evaluation: 1. ONE Administrative JPM, OR 2. TWO Administrative Questions
A.1	Conduct of Operations Shift Turnover	JPM - Perform Panel Walkdown for shift turnover. Identify (4) discrepancies.
	Conduct of Operations Plant Parameter Verification	JPM - Calculate RCS Leakrate without Computer
A.2	Equipment Control Tagouts	JPM - Identify valves on P&ID to isolate RWCU pump due to pump packing leak.
A.3	Radiation Control Calculating Personnel Exposure	Identify the dose rate the operator would receive hanging the tags on valves in the RWCU pump room.
A.4	Emergency Plan Evacuate Containment	JPM - Sound the Containment Evacuation Alarm and Make Plant Announcement from Outside of the Main Control Room

Admin JPM Worksheet RO A.1.a Turnover-Control Board Walkdown

Facility: Clinton Task No: _____

Task Title: Control Board Walkdown for Shift Turnover. (5 Discrepancies)

Job Performance Measure No: NEW K/A Reference: G 2.1.3

Applicability: RO_X__ SRO_____

Examinee: _____ NRC Examiner: _____

Facility Evaluator: _____ Date: _____

Method of testing:

Simulated Performance _____ Actual Performance __X_____

Classroom _____ Simulator ____X_____ Plant _____

READ TO THE EXAMINEE
I will explain the initial conditions, which steps to simulate or discuss, and provide initiating cues. When you complete the task successfully, the objective for this job performance measure will be satisfied.

Initial Conditions: The plant is at 100% power. You are the oncoming A-RO. The previous shift successfully completed post maintenance test of RCIC. RCIC was declared operable and returned to its standby lineup. The off-going A-RO did not report any equipment out of service, any TS LCOs, or any unusual conditions. HPCS surveillance is planned for oncoming shift.

Task Standard: Complete control board walkdown & identity 5 discrepancies for 100%.

Required Materials: None

General References: None

Initiating Cue: Conduct your control board walkdown and report to the CRS when you are ready to take the shift as the A-RO.

Time Critical Task: ~~YES~~ / **NO**

Validation Time:

Simulator Set-up Conditions: Any IC set-up for 100% power. Insert 4 discrepancies as follows:
- CRD Drive Water Header Pressure at about 400 psid. (Nominally it is ~ 250 > Rx pressure>)
- RCIC Auto Flow Controller set at 500 gpm. (Nominally ~ 600 gpm)
- RCS Loops flow not balanced: > 5 % difference (TS 3.4.1) **NEED VALUES???**
- HPCS SEAL-IN RESET Light Illuminated (The Level 8 "seal in." See LER 461/96002)
- ADS Inhibit Enabled.

Start Time: _____

PERFORMANCE INFORMATION

_____ Performance step: (Denote critical steps with an asterisk)
Step1: The Applicant performs control board walkdown in accordance with CPS 1401.04, Shift Turnover and Relief.

STANDARD: The Applicant performs a control board walkdown.

CUE:

COMMENT:

SAT _____ UNSAT _____

___*____ Performance step: (Denote critical steps with an asterisk)
Step 2: The Applicant identifies the following four (4) discrepancies and reports to the CRS.

- CRD Drive Water Header Pressure at about 400 psid. (Nominally it is ~ 250 > Rx pressure>)
- RCIC Auto Flow Controller set at 500 gpm. (Nominaly ~ 600 gpm.)
- RCS Loops flow not balanced: > 5 % difference (TS 3.4.1)
- HPCS SEAL-IN RESET Light Illuminated (The Level 8 "seal in." See LER 461/96002)
- ADS Inhibit Enabled.

STANDARD: Applicant identifies the five (5) discrepancies.

CUE:

COMMENT:

SAT _____ UNSAT _____

Terminating cue: Applicant reports 5 discrepancies.

Stop Time:

VERIFICATION OF COMPLETION

Job Performance Measure No. _____

Examinee's Name:

Examiner's Name:

Date performed:

Facility Evaluator:

Number of attempts:

Time to complete:

Question Documentation:

Question:_____
_____
_____
_____

Response:_____
_____
_____
_____
_____

Result: SAT or UNSAT

Examiner's signature and date: _____ _____

APPLICANT'S COPY

Initial Conditions: The plant is at 100% power. You are the oncoming A-RO. The previous shift successfully completed post maintenance test of RCIC. RCIC was declared operable and returned to its standby lineup. The off-going A-RO did not report any equipment out of service, any TS LCOs, or any unusual conditions. HPCS surveillance planned for oncoming shift.

Initiating Cue: Conduct your control board walkdown and report to the CRS when you are ready to take the shift as the A-RO.

Admin JPM Worksheet RO A.1.b Manually Calculate RCS Leakage

Facility: Clinton Task No: _____

Task Title: Manually Calculate RCS Leakage Averaged over the Previous 24 hours.

Job Performance Measure No: NEW K/A Reference: G 2.1.20

Applicability: RO_X__ SRO_____

Examinee: _____ NRC Examiner: _____

Facility Evaluator: _____ Date: _____

Method of testing:

Simulated Performance _____ Actual Performance __X_____

Classroom _____ Simulator ____X____ **OR** Plant (OCS) __X____

READ TO THE EXAMINEE
I will explain the initial conditions, which steps to simulate or discuss, and provide initiating cues. When you complete the task successfully, the objective for this job performance measure will be satisfied.

Initial Conditions: The Drywell (D/W) **Equipment** Drain Sump Pump was inadvertently placed in the AUTO-AFTER-**START** position last shift. The D/W **Floor** Drain Sump Pump was inadvertently placed in the AUTO-AFTER-**STOP** position last shift. Both switches were returned to AUTO on this shift approximately 30 minutes ago.

Task Standard: Manually calculate Total Operational Leakage averaged over the previous 24 hour period.

Required Materials: CPS 4001.01, RCS Coolant Leakage
CPS 9000.01D001, Control Room Surveillance Logs - Modes 1, 2, & 3.
CPS 3315.02, Leak Detection System.

General References: TS Definitions; TS 3.4.5, RCS Operational Leakage.

Initiating Cue: The Control Room Supervisor has directed to calculate RCS leakage Averaged over the previous 24 hour period.

Time Critical Task: ~~YES~~ / **NO**

Validation Time:

Simulator Set-up Conditions: None

Start Time: _____

PERFORMANCE INFORMATION

_____ Performance step: (Denote critical steps with an asterisk)
Step 1

- Applicant obtains current CPS 9000.01D001, Control Room Surveillance Logs - Modes 1, 2, & 3.

- Applicant obtains CPS 3315.02, Leak Detection System.

STANDARD: Applicant obtains copies of procedures.

CUE: After applicant obtains procedures, Examiner provide copies to Applicant.

COMMENT:

SAT _____ UNSAT _____

__*__ Performance step: (Denote critical steps with an asterisk)
Step 2

- Collect data from control room instrumentation for D/W Equip drain (RE) sump pump and D/W Floor drain (RF) sump pump and fills out control room logs.

STANDARD: Applicant obtains data from control room instrumentation and fills out control room logs.

CUE:

- IF the Applicant does NOT obtain ALL of the data needed to perform the calculation, THEN have the Applicant use the data he/she obtained to attempt to calculate the leak rate. WHEN the Applicant determines that he/she needs additional data AND obtains the missing data, THEN provide the Applicant with a copy of control room logs with data filled in.

- After Applicant has obtained all of the data needed to perform the calculation, the Examiner will provide Applicant with a copy of control room logs with data filled in.

COMMENT:

SAT _____ UNSAT _____

__*__ Performance step: (Denote critical steps with an asterisk)
Step 3
Applicant manually calculates Total Operational Leakage averaged over the previous 24 hour period.

STANDARD: Manually calculate Total Operational Leakage averaged over the previous 24 hour period.

COMMENT:

- Since the D/W **Equipment** Drain Sump Pump was in the AUTO-AFTER-**START** position, the Applicant must use method 2 (alternative) to compute RE in-leakage. CPS 3315.02, Step 8.2.7.

- Since the D/W **Floor** Drain Sump Pump was in the AUTO-AFTER-**STOP** position, the Applicant must use method 1 (preferred) to compute RF in-leakage. CPS 3315.02, Step 8.2.8.

SAT _____ UNSAT _____

Terminating cue: Manually calculate Total Operational Leakage averaged over the previous 24 hour period.

Stop Time: _____

Get answer sheet at validation week. Have station personnel calculate correct answer.

VERIFICATION OF COMPLETION

Job Performance Measure No. _____

Examinee's Name:

Examiner's Name:

Date performed:

Facility Evaluator:

Number of attempts:

Time to complete:

Question Documentation:

Question:_____

_____

_____

_____

Response:_____

_____

_____

_____

_____

Result: SAT or UNSAT

Examiner's signature and date: _____ _____

APPLICANT'S COPY

Initial Conditions:

- The Drywell (D/W) **Equipment** Drain Sump Pump was inadvertently placed in the AUTO-AFTER-**START** position last shift.
- The D/W **Floor** Drain Sump Pump was inadvertently placed in the AUTO-AFTER-**STOP** position last shift.
- Both switches were returned to AUTO on this shift approximately 30 minutes ago.

Initiating Cue:

The Control Room Supervisor has directed to calculate RCS leakage Averaged over the previous 24 hour period.

Facility: Clinton Task No: _____

Task Title: RWCU Pump Tagout Boundary

Job Performance Measure No: 035299J001 K/A Reference: G 2.2.13

Applicability: RO__X___ SRO _____

Examinee: _____ NRC Examiner: _____

Facility Evaluator: _____ Date: _____

Method of testing:

Simulated Performance _____ Actual Performance __X_____

Classroom ___X____ Simulator _____ Plant (OSC) __X____

READ TO THE EXAMINEE
I will explain the initial conditions, which steps to simulate or discuss, and provide initiating cues. When you complete the task successfully, the objective for this job performance measure will be satisfied.

Initial Conditions: A leak in the A-RWCU pump mechanical seal was identified last shift. The pump has been secured. A tagout for the pump (mechanical) needs to be developed.

Task Standard: Applicant correctly identifies isolation valves and their position on the P&IDs needed to allow replacement of the mechanical seal on the A-RWCU pump.

Required Materials: P&IDs for RWCU, Aux Bldg Floor Drains, & CCW.

General References: CPS 1004.01, Safety Tagging

Initiating Cue: You are an extra RO on shift. You are directed to identify the boundary valves and their position to isolate the A-RWCU pump to allow mechanical seal replacement. Use P&IDs to identify the valves and their positions.

Time Critical Task: ~~YES~~ / NO

Validation Time:

Simulator Set-up Conditions: None.

Start Time: _____

PERFORMANCE INFORMATION

_____ Performance step: (Denote critical steps with an asterisk)
Step 1: Applicant obtains P&IDs for RWCU (MO5-1076) & CCW (MO5-1032).

STANDARD: Applicant obtains P&IDs for RWCU (RT), Aux Bldg Floor Drains (RF), & CCW (CC).

CUE: After Applicant informs you where he/she would obtain the P&IDs, provide copies to Applicant .

SAT _____ UNSAT _____

___*____ Performance step: (Denote critical steps with an asterisk)
Step 2: Applicant correctly identifies isolation valves and their position needed to allow replacement of the mechanical seal on the A-RWCU pump.

STANDARD:
Applicant correctly identifies isolation valves and their position on the P&IDs needed to allow replacement of the mechanical seal on the A-RWCU pump.
RWCU (1G33) valves:

1G33-FO43A, RWCU Pump-A Suction Isolation. (SHUT) **(Critical)**
-FO03A, RWCU Pump-A Suction Isolation. (SHUT) **(Critical)**
-FO13A, RWCU Pump-A Discharge Isolation. (SHUT) **(Critical)**
-FO45A, RWCU Pump-A Discharge Orifice Isolation. (SHUT) **(Critical)**
-F308A, RWCU Pump-A Suction Header Drain Isolation. (OPEN) (NON-Critical)
-F309A, RWCU Pump-A Suction Header Drain Isolation. (OPEN) (NON-Critical)
-F010A, RWCU Pump-A Vent Isolation. (OPEN) (NON-Critical)
-F011A, RWCU Pump-A Vent Isolation. (OPEN) (NON-Critical)
-F008A, RWCU Pump-A Drain Isolation. (OPEN) (NON-Critical)
-F009A, RWCU Pump-A Drain Isolation. (OPEN) (NON-Critical)

Component Cooling Water (1CC) valves:

1CC-1CC045A, RWCU Pump-A Seal Cooler Inlet Isolation. (SHUT) **(Critical)**
-1CC046A, RWCU Pump-A Seal Cooler Outlet Isolation. (SHUT) **(Critical)**

SAT _____ UNSAT _____

Terminating cue: Applicant correctly identifies isolation valves on the P&IDs.

Stop Time: _____

VERIFICATION OF COMPLETION

Job Performance Measure No. _____

Examinee's Name:

Examiner's Name:

Date performed:

Facility Evaluator:

Number of attempts:

Time to complete:

Question Documentation:

Question:_____

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Response:_____

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_____

Result: SAT or UNSAT

Examiner's signature and date: _____ _____

APPLICANT'S COPY

Initial Conditions: A leak in the A-RWCU pump mechanical seal was identified last shift. The pump has been secured. A tagout for the pump (mechanical) needs to be developed.

Initiating Cue: You are an extra RO on shift. You are directed to identify the boundary valves and their position to isolate the A-RWCU pump to allow mechanical seal replacement. Use P&IDs to identify the valves and their positions.

Admin JPM Worksheet RO A.3 Identify Dose Rate for RWCU Pump Tagout

Facility: Clinton Task No: _____

Task Title: Identify Dose Rate for RWCU Pump Tagout

Job Performance Measure No: New K/A Reference: G 2.3.1

Applicability: RO X SRO ____

Examinee: _____ NRC Examiner: _____

Facility Evaluator: _____ Date: _____

Method of testing:

Simulated Performance _____ Actual Performance X

Classroom X Simulator _____ Plant (OSC) X

READ TO THE EXAMINEE
I will explain the initial conditions, which steps to simulate or discuss, and provide initiating cues. When you complete the task successfully, the objective for this job performance measure will be satisfied.

Initial Conditions: A leak in the A-RWCU pump mechanical seal was identified last shift. The pump has been secured and the tagout has been developed. RP has competed its survey and no airborne radiation was identified. The Work Control Center estimated that it would take about 30 minutes for 1 individual to hang the tags on the A-RWCU pump.

Task Standard: Applicant has determined that he/she would NOT be able to hang tags and remain within CPS administrative dose limits. The Applicant would receive about 60 mRem dose completing the job. Applicant would exceed the 4000 mRem annual limit.

Required Materials: Dose map for the RWCU pump room.

General References: CPS 1024.05, Occupational Radiation Exposure Control & Monitoring.

Initiating Cue: It is December 29, 2001, and you are the extra RO on shift.

Your dose history for 2001 is as follows:

Dose for January 2001: 7 mRem TEDE
2005 mRem TEDE from Grand Gulf (you were on a rotation during a forced outage from 2/01 to 6/30/01.
1881 mRem TEDE from Clinton (special LPRM replacement project during forced outage (7/1 - 9/30/01).
Dose for October 2001: 15 mRem TEDE
Dose for November 2001: 18 mRem TEDE
Current Dose for month of December 2001: 16 mRem TEDE. No dose for today.

Determine if you can hang the tags and not exceed any exposure limits. If ANY exposure limits are exceeded, identify the limit. Examiner provide Applicant with RWCU pump room dose map.

Time Critical Task: ~~YES~~ / NO

Validation Time:

Simulator Set-up Conditions: None.

Start Time: _____

PERFORMANCE INFORMATION

__*____ Performance step: (Denote critical steps with an asterisk)

Step 1: Applicant reviews dose history and determines:

Total yearly dose to date is: 3942 mRem TEDE (less than CPS admin limit)
Clinton yearly dose is: 1937 mRem TEDE. (less than CPS admin limit)
Applicant has a dose margin of 58 mRem TEDE (using 4000mRem limit)
Applicant has a dose margin of 63 mRem TEDE (using 2000mRem limit)
Applicant has received 16 mRem TEDE for the month of December 2001. No dose today.

Based on dose reading on survey map, the general dose rate for the area is 120 mRem/hr. For a 30 minute job, the individual will receive about 60 mRem.

STANDARD:

- Applicant would NOT be able to hang tags and remain within CPS administrative dose limits. **(Critical)**

- Applicant determines he/she:
  will exceed 4000 mRem TEDE limit, **(Critical)**
  will not exceed 2000 mRem TEDE limit, and (Non-Critical)
  will exceed monthly goal of 40 TEDE mRem. (Non-Critical)

COMMENT:
CPS annual TEDE administrative limit of 2000mRem for exposure received only from CPS.
CPS annual TEDE administrative limit of 4000mRem for exposure received from any facility.
CPS monthly exposure goal is about 40 mRem TEDE . (Not an administrative limit.)

SAT _____ UNSAT _____

Terminating cue:.
Applicant has determined that he/she would NOT be able to hang tags and remain within CPS administrative dose limits.
Applicant would exceed 4000mRem TEDE limit.

Stop Time: _____

VERIFICATION OF COMPLETION

Job Performance Measure No. _____

Examinee's Name:

Examiner's Name:

Date performed:

Facility Evaluator:

Number of attempts:

Time to complete:

Question Documentation:

Question:_____

_____

_____

_____

Response:_____

_____

_____

_____

_____

Result: SAT or UNSAT

Examiner's signature and date: _____ _____

APPLICANT'S COPY

Initial Conditions: A leak in the A-RWCU pump mechanical seal was identified last shift. The pump has been secured and the tagout has been developed. RP has competed its survey and no airborne radiation was identified. The Work Control Center estimated that it would take about 30 minutes for 1 individual to hang the tags on the A-RWCU pump.

Initiating Cue: It is December 29, 2001, and you are the extra RO on shift.

Your dose history for 2001 is as follows:

Dose for January 2001: 7 mRem TEDE
1997 mRem TEDE from Grand Gulf (you were on a rotation during a forced outage from 2/01 to 6/30/01.
1881 mRem TEDE from Clinton (special LPRM replacement project during forced outage (7/1 - 9/30/01).
Dose for October 2001: 15 mRem TEDE
Dose for November 2001: 18 mRem TEDE
Current Dose for month of December 2001: 16 mRem TEDE. No dose for today.

Determine if you can hang the tags and not exceed any exposure limits. If ANY exposure limits are exceeded, identify the limit. Examiner provide Applicant with RWCU pump room dose map.

Facility: Clinton Task No: _____

Task Title: Sound Containment Evacuation Alarm and Make Plant Announcement from Outside of the Main Control Room.

Job Performance Measure No: New K/A Reference: G 2.4.43

Applicability: RO_X___ SRO____

Examinee: _____ NRC Examiner: _____

Facility Evaluator: _____ Date: _____

Method of testing:

Simulated Performance _____X_____ Actual Performance _____

Classroom _____ Simulator _____ Plant __X____

READ TO THE EXAMINEE
I will explain the initial conditions, which steps to simulate or discuss, and provide initiating cues. When you complete the task successfully, the objective for this job performance measure will be satisfied.

Initial Conditions: A condition exists where the control room was evacuated. The actions in CPS 4003.01, Remote Shutdown, step 4.2.1 have been completed EXCEPT sounding the containment evacuation alarm AND the plant announcement.

Task Standard: Applicant has simulated sounding the containment evacuation alarm and simulated making the plant announcement from outside of the main control room (at the Remote Shutdown Panel).

Required Materials: CPS 4003.01, Remote Shutdown

General References: None

Initiating Cue: You are an extra RO on shift. The CRS has already dispatched: (1) the A-CRO to the complete the actions on Hard Card "A," (2) an operator to complete the actions on Hard Card "B," (3) and the Safe Shutdown Operator to the Div 1 Diesel Generator Room.

The CRS has directed you to sound the containment evacuation alarm and to make the plant announcement in CPS 4003.01, step 4.2.1 a. from outside of the control room. The Examiner will provide the Applicant with a copy of CPS 4003.01

Time Critical Task: ~~YES~~ / **NO**

Validation Time:

Simulator Set-up Conditions: None

Start Time: _____

PERFORMANCE INFORMATION

___*___ Performance step: (Denote critical steps with an asterisk)

Step 1: Applicant proceeds to the Remote Shutdown Panel (in the plant) and has simulated depressing the containment evacuation alarm pushbutton and simulated making the plant announcement.

STANDARD: Applicant has simulated depressing the containment evacuation alarm pushbutton and simulated making the plant announcement from the Remote Shutdown Panel.

COMMENT:

Plant Announcement in CPS 4003.01, Step 4.2.1.a)

ATTENTION ALL PERSONNEL. ATTENTION ALL PERSONNEL.
THE MAIN CONTROL ROOM IS BEING (OR HAS BEEN) EVACUATED.
PLANT CONTROL IS BEING (OR HAS BEEN) TRANSFERRED TO THE REMOTE SHUTDOWN PANEL.
EVACUATE THE RCIC ROOM.

SAT _____ UNSAT _____

Terminating cue: Applicant has simulated sounding the containment evacuation alarm and simulated making the plant announcement.

Stop Time: _____

VERIFICATION OF COMPLETION

Job Performance Measure No. _____

Examinee's Name:

Examiner's Name:

Date performed:

Facility Evaluator:

Number of attempts:

Time to complete:

Question Documentation:

Question:_____
_____
_____
_____

Response:_____
_____
_____
_____
_____

Result: SAT or UNSAT

Examiner's signature and date: _____ _____

APPLICANT'S COPY

Initial Conditions:. A condition exists where the control room was evacuated. The actions in CPS 4003.01, Remote Shutdown, step 4.2.1 have been completed EXCEPT sounding the containment evacuation alarm AND the plant announcement.

Initiating Cue: You are an extra RO on shift. The CRS has already dispatched: (1) the A-CRO to the complete the actions on Hard Card "A," (2) an operator to complete the actions on Hard Card "B," (3) and the Safe Shutdown Operator to the Div 1 Diesel Generator Room.

The CRS has directed you to sound the containment evacuation alarm and to make the plant announcement in CPS 4003.01, step 4.2.1 a. from outside of the control room. The Examiner will provide the you with a copy of CPS 4003.01.

Facility: Clinton Power Station
Date of Examination: 06/05/00
Examination Level (circle one): RO (SRO)
Operating Test Number: 2000301

Administrative Topic/Subject Description		Describe method of evaluation: 1. ONE Administrative JPM, OR 2. TWO Administrative Questions
A.1	Conduct of Operations Night/Standing Orders	JPM - Write/Develop a Night Order to call the Electrical Maintenance Department Head if VARS were adjusted by more than 3%.
	Conduct of Operations Fuel Handling	JPM - Determine if fuel loading can continue with a source range nuclear instrument out of service.
A.2	Equipment Control Tagouts	JPM - Verify the RWCU pump isolation boundary tagout for leaking pump packing is adequate. (There will be at least one error in the tagout package.)
A.3	Radiation Control Liquid Rad Waste Discharge Permit	JPM - Simulate entry into a locked high radiation area.
A.4	Emergency Plan Make PARs	JPM - Make EP Protective Action Recommendations (PARs) after Scenario #1.

Facility: Clinton Task No: _____

Task Title: Write and Issue a Night Order

Job Performance Measure No: New K/A Reference: G 2.1.15

Applicability: RO____ SRO__X__

Examinee: _____ NRC Examiner: _____

Facility Evaluator: _____ Date: _____

Method of testing:

Simulated Performance _____ Actual Performance __X_____

Classroom _____X_____ Simulator _____ Plant _____

READ TO THE EXAMINEE
I will explain the initial conditions, which steps to simulate or discuss, and provide initiating cues. When you complete the task successfully, the objective for this job performance measure will be satisfied.

Initial Conditions: The plant is at 100%. No evolutions in progress. No equipment out of service. No TS LCOs. You are the SM and it is 6:00 p.m. on Friday. The Electrical Maintenance Department Head called and said he just read a GE SIL (fictitious) about adjusting main generator VARS. He wanted to be called if VARS were adjusted by more than 3%. He also suggested that you write a Night Order about it and then hung up.

Task Standard: Write and Obtain Permission to Issue a Night Order to call the Electrical Maintenance Department Head if VARS were adjusted by more than 3%.

Required Materials: CPS 1401.00, Conduct of Operations;
CPS1401.07, Communicating Information

General References: None

Initiating Cue: You are the Shift Manager. With the information provided, write and issue a Night Order to call the Electrical Maintenance Department Head if VARS were adjusted by more than 3%.

Time Critical Task: ~~YES~~ / NO

Validation Time:

Simulator Set-up Conditions: None

Start Time: _____

PERFORMANCE INFORMATION

_____ Performance Step (Denote Critical Steps with an asterisk)
Step 1: Applicant obtains copy of CPS 1401.00, Conduct of Operations.
Applicant obtains copy of CPS 1407.00, Communicating Information.

STANDARD: Applicant obtains copy of CPS 1401.00, Conduct of Operations.
Applicant obtains copy of CPS 1407.00, Communicating Information

CUE: When Applicant obtains CPS 1401.00 & CPS 1407.00, provide copies to Applicant.

COMMENT:

SAT_____UNSAT_____

___*___ Performance Step (Denote Critical Steps with an asterisk)
Step 2: Applicant writes a Night Order (to call the Electrical Maintenance Department Head if VARS are adjusted by more than 3%) by any convenient method (e.g., SM Shift Turnover Record, a handwritten or typed memo form, etc).

STANDARD: Applicant writes a Night Order (to call the Electrical Maintenance Department Head if VARS are adjusted by more than 3%) by any convenient method (e.g., SM Shift Turnover Record, a handwritten or typed memo form, etc).

CUE: If the Applicant asks what format to use, the Examiner will inform the Applicant to use a handwritten memo form.

COMMENT: Step 8.2.7.a in CPS 1401.07.

SAT_____UNSAT_____

___*___ Performance Step (Denote Critical Steps with an asterisk)
Step 3: Applicant Specifies a Duration for the Night Order.

STANDARD: Applicant Specifies a Duration for the Night Order.

CUE: If the Applicant attempts to contact the Electrical Maintenance Department Head on site, indicate that the call was from off site.

If the Applicant attempts to contact the Department Head at home by telephone, pager, or cell phone, indicate the attempts were unsuccessful. ,

COMMENT: Step 8.2.8.7, CPS 1401.07, states that Night Orders remain in effect for a duration of ten (10) days unless specified longer.

SAT_____UNSAT_____

___*___ Performance Step (Denote Critical Steps with an asterisk)

Step 4: Applicant obtains permission to issue the Night Order from the Director - Operations (or his designee).

STANDARD: Applicant obtains permission to issue the Night Order from the Director - Operations (or his designee).

CUE: If the Applicant attempts to contact the Director - Operations by on site, indicate that he is off site.

If the Applicant attempts to contact the Director - Operations at home by telephone, pager, or cell phone, indicate the Director - Operations gave permission to issue the Night Order.

COMMENT: Step 8.2.2 in CPS 1401.07.

SAT _____ UNSAT _____

Terminating Cue:

The Applicant has handwritten a Night Order to call the Electrical Maintenance Department Head if VARS are adjusted by more than 3%. The Director - Operations (or his designee) has given permission to issue the Night Order. The Night Order has a specified duration.

Stop Time: _____

VERIFICATION OF COMPLETION

Job Performance Measure No. _____

Examinee's Name:

Examiner's Name:

Date performed:

Facility Evaluator:

Number of attempts:

Time to complete:

Question Documentation:

Question:_____

_____

_____

_____

Response:_____

_____

_____

_____

_____

Result: SAT or UNSAT

Examiner's signature and date: _____ _____

APPLICANTS COPY

Initial Conditions: The plant is at 100%. No evolutions in progress. No equipment out of service. No TS LCOs. You are the SM and it is 6:00 p.m. on Friday. The Electrical Maintenance Department Head called and said he just read a GE SIL (fictitious) about adjusting main generator VARS. He wanted to be called if VARS were adjusted by more than 3%. He also suggested that you write a Night Order about it and then hung up.

Initiating Cue: You are the Shift Manager. With the information provided, write and issue a Night Order to call the Electrical Maintenance Department Head if VARS were adjusted by more than 3%.

Facility: Clinton Task No: _____

Task Title: Determine if Core Alterations Can Continue Based on SRM Indications.

Job Performance Measure No: NEW K/A Reference: G 2.1.7

Applicability: RO_____ SRO_X__

Examinee: _____ NRC Examiner: _____

Facility Evaluator: _____ Date: _____

Method of testing:

Simulated Performance _____ Actual Performance __X_____

Classroom _____X_____ Simulator _____ Plant _____

READ TO THE EXAMINEE
I will explain the initial conditions, which steps to simulate or discuss, and provide initiating cues. When you complete the task successfully, the objective for this job performance measure will be satisfied.

Initial Conditions:
You are the oncoming Control Room Supervisor (CRS). Refueling is in progress. Refueling operations are on hold for the control room turnover. During your panel walkdowns, you observe the following SRM indications:

SRM-A 3 cps; SRM-B 2 cps; SRM-C 5 cps; SRM-D 4 cps

Task Standard: Applicant determines that core alterations may continue. Applicant provides reference(s) that support the decision to continue core alterations.

Required Materials: TS 3.3.1.2 and /or CPS 3703.01, Core Alterations, Section 6.10.

General References:

Initiating Cue: The next fuel bundle to be inserted is in the cell for rod 18-47. Determine if you would approve or disapprove the next planned fuel move. Provide any references that support your decision.

Time Critical Task: ~~YES~~/ NO

Validation Time:

Simulator Set-up Conditions: None. Admin JPM

Start Time: _____

PERFORMANCE INFORMATION

_____ Performance step: (Denote critical steps with an asterisk)

Step 1: Applicant obtains CPS 3703.01, Core Alterations.
Applicant obtains Technical Specifications.

STANDARD: Applicant obtains CPS 3703.01, Core Alterations.
Applicant obtains Technical Specifications.

CUE: After Applicant obtains CPS 3703.01, provide applicant with a copy.
After Applicant obtains TS, provide applicant with a copy.

COMMENT:
Applicant may need to determine location of rod 18-47 to determine its proximity to the SRMs. Rod 18-47 is in same quadrant as SRM-A.

SAT _____ UNSAT _____

__*_____ Performance step: (Denote critical steps with an asterisk)

Step 2: Applicant reviews CPS 3703.01, Step 6.10 and TS 3.3.1.2 and determines that core alterations can continue.

STANDARD: Applicant determines that core alterations can continue.

CUE: If the Applicant asks about a spiral reload, the Examiner will indicate that a spiral reload is NOT being performed.

NOTE: The information about spiral reload is identified in TS 3.3.1.2, Table 3.3.1.2-1, Note (b).

SAT _____ UNSAT _____

__*_____	Performance step: (Denote critical steps with an asterisk)
Step 3	Applicant provides CPS 3703.01, Step 6.10 and/or TS 3.3.1.2 as the references that support the decision to continue core alterations.
STANDARD:	Applicant provides CPS 3703.01, Step 6.10 and/or TS 3.3.1.2 as the references that support the decision to continue core alterations.

NOTE for Examiner:

- Since SRM-B is < 3cps, it is inoperable.
- TS and CPS 3703.01 require suspending core alterations if (1) the inoperable SRM is in a quadrant where core alterations are being performed, OR (2) both SRMs are inoperable in the adjacent quadrant to the quadrants where the core alterations are being performed.
- Since SRM-A and SRM-D are operable, OK to continue with core alterations.

Terminating Cue:
Applicant informs Examiner that core alterations may continue.

Stop Time: _____

VERIFICATION OF COMPLETION

Job Performance Measure No. _____

Examinee's Name:

Examiner's Name:

Date performed:

Facility Evaluator:

Number of attempts:

Time to complete:

Question Documentation:

Question:_____

_____

_____

_____

Response:_____

_____

_____

_____

_____

Result: SAT or UNSAT

Examiner's signature and date: _____ _____

APPLICANT'S COPY

Initial Conditions:
You are the oncoming Control Room Supervisor (CRS). Refueling is in progress. Refueling operations are on hold for the control room turnover. During your panel walkdowns, you observe the following SRM indications:

SRM-A 3 cps; SRM-B 2 cps; SRM-C 5 cps; SRM-D 4 cps

Initiating Cue: The next fuel bundle to be inserted is in the cell for rod 18-47. Determine if you would approve or disapprove the next planned fuel move. Provide any references that supports your decision.

Admin JPM Worksheet SRO A.2 Review A-RWCU Pump Tagout

Facility: Clinton Task No: _____

Task Title: Review A- RWCU Pump Tagout (One Valve Not Identified)

Job Performance Measure No: 035299J001 K/A Reference: G 2.2.13

Applicability: RO____ SRO_X___

Examinee: _____ NRC Examiner: _____

Facility Evaluator: _____ Date: _____

Method of testing:

Simulated Performance _____ Actual Performance __X_____

Classroom ____X_____ Simulator _____ Plant (OSC) __X____

READ TO THE EXAMINEE
I will explain the initial conditions, which steps to simulate or discuss, and provide initiating cues. When you complete the task successfully, the objective for this job performance measure will be satisfied.

Initial Conditions: A leak in the A-RWCU pump mechanical seal was identified last shift. The pump has been secured. A tagout for the pump (mechanical) has been developed.

Task Standard: Applicant correctly identifies that the isolation valve for the 3/4 inch bypass line for the A-RWCU pump was not on identified on the tagout sheet. The Applicant also correctly determines that the isolation valves on the tagout sheet were correctly identified and were in the correct position. The Applicant will point out the valves and their positions to the Examiner on P&IDs.

Required Materials: Tagout Sheet for A-RWCU pump mechanical seal.
P&IDs for RWCU, Aux Bldg Floor Drains, & CCW.

General References: CPS 1004.01, Safety Tagging

Initiating Cue: You are an extra SRO on-shift. You are directed to review the tagout (mechanical) to replace the A-RWCU pump mechanical seal. Determine if the tagout is adequate to replace the mechanical seal. If the tagout is adequate, identify the valve(s) and its/their position(s) that supports you conclusion. If there are any errors, identify the error(s) and identify the correction. Use P&IDs to identify the valves and their positions. The Examiner will provide the Applicant with a copy of the tagout.

Time Critical Task: ~~YES~~ / NO Validation Time:

Simulator Set-up Conditions: None.

Start Time: _____

PERFORMANCE INFORMATION

_____ Performance step: (Denote critical steps with an asterisk)

Step 1: Applicant obtains P&IDs for RWCU (MO5-1076) & CCW (MO5-1032).

STANDARD: Applicant obtains P&IDs for RWCU (RT), Aux Bldg Floor Drains (RF), & CCW (CC).

CUE: After Applicant informs you where he/she would obtain the P&IDs, provide copies to Applicant .

SAT _____ UNSAT _____

___*____ Performance step: (Denote critical steps with an asterisk)

Step 2: Applicant reviews the tagout sheet and determines that 1G33-FO45A, RWCU Pump-A Discharge Orifice Isolation was not included on the tagout sheet. The Applicant indicates that the valve should be SHUT.

STANDARD: Applicant correctly determines that the isolation valve for the 3/4 inch bypass line for the A-RWCU pump, 1G33-FO45A, RWCU Pump-A Discharge Orifice Isolation, was NOT on identified on the tagout sheet. The Applicant indicates that the valve should be SHUT. The Applicant uses P&IDs to identify the valve and its position.

CUE: If the Applicant does not mention the valves identified on the tagout sheet, the Examiner will ask about the valves and their positions identified on the sheet.

SAT _____ UNSAT _____

___*____ Performance step: (Denote critical steps with an asterisk)

Step 3: Applicant reviews the tagout sheet and determines that the valves listed on tagout sheet were needed to tagout the A-RWCU pump to replace the mechanical seal and were in the correct position.

STANDARD:
The isolation valves on the tagout sheet were correctly identified and in there correct position.
The Applicant uses P&IDs to identify the valves and their positions.
RWCU (1G33) valves:

1G33-FO43A, RWCU Pump-A Suction Isolation. (SHUT) **(Critical)**
-FO03A, RWCU Pump-A Suction Isolation. (SHUT) **(Critical)**
-FO13A, RWCU Pump-A Discharge Isolation. (SHUT) **(Critical)**
-F308A, RWCU Pump-A Suction Header Drain Isolation. (OPEN) (Non-Critical)
-F309A, RWCU Pump-A Suction Header Drain Isolation. (OPEN) (Non-Critical)
-F010A, RWCU Pump-A Vent Isolation. (OPEN) (Non-Critical)
-F011A, RWCU Pump-A Vent Isolation. (OPEN) (Non-Critical)
-F008A, RWCU Pump-A Drain Isolation. (OPEN) (Non-Critical)
-F009A, RWCU Pump-A Drain Isolation. (OPEN) (Non-Critical)

Component Cooling Water (1CC) valves:

1CC-1CC045A, RWCU Pump-A Seal Cooler Inlet Isolation. (SHUT) **(Critical)**
-1CC046A, RWCU Pump-A Seal Cooler Outlet Isolation. (SHUT) **(Critical)**

SAT _____ UNSAT _____

Terminating cue: Applicant determines that one valve, 1G33-FO45A, RWCU Pump-A Discharge Orifice Isolation, was missing on the tagout sheet. The valve should be SHUT. The remainder of the isolation valves were correctly identified and were in the correct position.

Stop Time: _____

VERIFICATION OF COMPLETION

Job Performance Measure No. _____

Examinee's Name:

Examiner's Name:

Date performed:

Facility Evaluator:

Number of attempts:

Time to complete:

Question Documentation:

Question:_____

_____

_____

_____

Response:_____

_____

_____

_____

_____

Result: SAT or UNSAT

Examiner's signature and date: _____ _____

APPLICANT'S COPY

Initial Conditions: A leak in the A-RWCU pump mechanical seal was identified last shift. The pump has been secured. A tagout for the pump (mechanical) has been developed.

Initiating Cue: You are an extra SRO on-shift. You are directed to review the tagout (mechanical) to replace the A-RWCU pump mechanical seal. Determine if the tagout is adequate to replace the mechanical seal. If the tagout is adequate, identify the valve(s) and its/their position(s) that supports you conclusion. If there are any errors, identify the error(s) and identify the correction. Use P&IDs to identify the valves and their positions. The Examiner will provide the Applicant with a copy of the tagout.

Admim JPM Worksheet SRO A.3 Entry into Locked High Radiation Area

Facility: Clinton Task No: 03334C012

Task Title: Simulated Entry into a Locked High Radiation Area.

Job Performance Measure No: _____ K/A Reference: G 2.3.1

Applicability: RO_____ SRO_X__

Examinee: _____ NRC Examiner: _____

Facility Evaluator: _____ Date: _____

Method of testing:

Simulated Performance ____X_____ Actual Performance _____

Classroom _____ Simulator _____ Plant ____X____

READ TO THE EXAMINEE
I will explain the initial conditions, which steps to simulate or discuss, and provide initiating cues. When you complete the task successfully, the objective for this job performance measure will be satisfied.

Initial Conditions: The plant is operating at about 100%. Based on Aux Bldg floor drain sump pump run times, area temperature readings, and radiation readings, the previous shift concluded there might be a leak in the A-RWCU pump room. The A-RWCU pump was shutdown, but not isolated.

Task Standard: Applicant complies with the appropriate radiological and administrative procedures required to simulate entering the A-RWCU pump room.

Required Materials: RWP from licensee

General References:

Initiating Cue: You are an extra SRO on shift. The SM directs you to follow the appropriate radiological procedures and (simulate) enter(ing) the A-RWCU pump room to quantify the leak.

Time Critical Task: ~~YES~~ / NO

Validation Time:

Simulator Set-up Conditions: None

Start Time: _____

PERFORMANCE INFORMATION

__*___ Performance step: (Denote critical steps with an asterisk)
Step 1: Review the RWP and simulate signing in on RWP.

STANDARD: Review the RWP (Non-Critical) and simulate **signing** in on RWP **(Critical)**.

COMMENT: Applicant will contact RP to determine the correct RWP.

SAT _____ UNSAT _____

_____ Performance step: (Denote critical steps with an asterisk)
Step 2: Determine personal dose margin.

STANDARD: Determine personal dose margin.

COMMENT: Applicant will contact RP to determine personal dose margin.

SAT _____ UNSAT _____

__*__ Performance step: (Denote critical steps with an asterisk)
Step 3: Review survey map:
identify and verbalize the hot spots, the high and low dose areas, and the contamination areas.

STANDARD: Review survey map:
identify and verbalize the hot spots, the high and low dose areas, and the contamination areas.

COMMENT:

SAT _____ UNSAT _____

__*__ Performance step: (Denote critical steps with an asterisk)
Step 4: Simulate obtaining high radiation area key for A-RWCU pump room.

STANDARD: Simulate obtaining high radiation area key for A-RWCU pump room.

COMMENTS:

SAT _____ UNSAT _____

__*__ Performance step: (Denote critical steps with an asterisk)
Step 5: Simulate obtaining dosimetry identified on RWP to enter A-RWCU pump room

STANDARD: Simulate obtaining dosimetry identified on RWP to enter A-RWCU pump room

COMMENTS:

SAT _____ UNSAT _____

__*__ Performance step: (Denote critical steps with an asterisk)
Step 6: Simulate obtaining personnel contamination protective clothing identified on RWP to enter A-RWCU pump room.

STANDARD: Simulate obtaining personnel contamination protective clothing identified on RWP to enter A-RWCU pump room.

COMMENTS:

SAT _____ UNSAT _____

__*__ Performance step: (Denote critical steps with an asterisk)
Step 7: Go to the door for the A-RWCU pump room.

STANDARD: Go to the door for the A-RWCU pump room.

COMMENTS: The Applicant will **NOT** be unlocking the A-RWCU pump room or entering the pump room.

SAT _____ UNSAT _____

Terminating cue:
The Applicant has taken the NRC Examiner to the A-RWCU pump room.

Stop Time: _____

VERIFICATION OF COMPLETION

Job Performance Measure No. _____

Examinee's Name:

Examiner's Name:

Date performed:

Facility Evaluator:

Number of attempts:

Time to complete:

Question Documentation:

Question:_____

_____

_____

_____

Response:_____

_____

_____

_____

_____

Result: SAT or UNSAT

Examiner's signature and date: _____ _____

APPLICANT'S COPY

Initial Conditions:
The plant is operating at about 100%. Based on Aux Bldg floor drain sump pump run times, area temperature readings, and radiation readings, the previous shift concluded there might be a leak in the A-RWCU pump room. The A-RWCU pump was shutdown, but not isolated.

Initiating Cue: You are an extra SRO on shift. The SM directs you to follow the appropriate radiological procedures and (simulate) enter(ing) the A-RWCU pump room to quantify the leak.

Admin JPM Worksheet SRO A.4 Emergency Action Level/Protective Action Recommendation

Facility: Clinton _____ Task No: _____

Task Title: Emergency Action Level Determination/Protective Action Recommendation

Job Performance Measure No: New ___ K/A Reference: G 2.4.44 _____

Applicability: RO____ SRO_X___

Examinee: _____ NRC Examiner: _____

Facility Evaluator: _____ Date: _____

Method of testing:

Simulated Performance _____ Actual Performance __X_____

Classroom ____X_____ Simulator _____ Plant (OSC) __X____

READ TO THE EXAMINEE
I will explain the initial conditions, which steps to simulate or discuss, and provide initiating cues. When you complete the task successfully, the objective for this job performance measure will be satisfied.

Initial Conditions:
The plant experienced a hydraulic ATWS from 100% power. SLC did not inject. Power was reduced to <5% by lowering RPV level. All rods were manually inserted to shut down the Rx. Actions to restore RPV level and pressure control are in progress. Actions to stabilize primary and secondary containment parameters are in progress. The PASS Team is being briefed to take a sample. Field Monitoring Teams have been dispatched.

Specific parameters: Drywell radiation levels: ~ 4.6E+5 R/hr.
Containment Radiation levels: ~ 2.8E+5 R/hr.
Dose at site boundary: ~ 3 Rem/hr.

Task Standard: Correctly Determine the Emergency Action Level/Protective Action Recommendation for the conditions provided.

NOTE - THIS SRO ADMIN JPM IS TO BE PERFORMED AFTER SCENARIO ONE.

Required Materials: Procedure EC-02, Emergency Classification and Attachments.
Attachment 1: Index of Emergency Classification Guidelines.
Attachment 2: Emergency Classification Guidelines - Category 1, Fission Product Boundary Failure; Category 2, Fuel Damage/Degraded Core; Category 3, Reactor Scram; and Category 4, Radiological Emergency.
Procedure EC-05, Site Area Emergency.
Procedure EC-06, General Emergency.
Procedure RA-02, Protective Action Recommendations.

General References:

Admin JPM Worksheet SRO A.4 Emergency Action Level/Protective Action Recommendation

Initiating Cue:
You are the Shift Manager. Determine the Emergency Action Level/Protective Action Recommendation for the conditions provided and provide the justification for you classification.

Time Critical Task: ~~YES~~ / **NO**

Validation Time:

Simulator Set-up Conditions: None

Start Time: _____

PERFORMANCE INFORMATION

_____ Performance step: (Denote critical steps with an asterisk)

Step 1:

Applicant obtains simulator copy of:

- Procedure EC-02, Emergency Classification and Attachments.
- Attachment 1: Index of Emergency Classification Guidelines.
- Attachment 2: Emergency Classification Guidelines - Category 1, Fission Product Boundary Failure; Category 2, Fuel Damage/Degraded Core; Category 3, Reactor Scram; and Category 4, Radiological Emergency.
- Procedure EC-05, Site Area Emergency.
- Procedure EC-06, General Emergency.
- Procedure RA-02, Protective Action Recommendations.

STANDARD: Applicant obtains simulator copies or procedures.

CUE: After Applicant obtains the simulator copies, provide copies to Applicant .

SAT _____ UNSAT _____

_____ Performance step: (Denote critical steps with an asterisk)

Step 2:

Applicant determines Emergency Action Level Recommendation for the conditions provided.

STANDARD: EAL - General Area Emergency

CUE: If asked, winds are from the SE 2-3 knots - Steady. No adverse weather conditions predicted.

COMMENTS:

- Based on EC-02, Att 2, Cat 1, Fission Product Boundary Failure, Symptom 1.1, General Guidance - Alert (failed fuel clad).
- Based on EC-02, Att 2, Cat 2, Fuel Damage/Degraded Core, Symptom 2.3, core Melt - General Area Emergency (any core melt situation).
- Based on EC-02, Att 2, Cat 3, Radiological Emergency, Symptom 3.3, High Radiation Levels Outside the Plant - General Area Emergency (measured radiation levels at site boundary > 1 Rem TEDE).
- Based on EC-02, Att 2, Cat 7, Reactor Scram, Symptom 7.1, RPS Functions Causing a Rx Scram - Site Area Emergency (failure of RPS to complete scram & power remains > 5%).

SAT _____ UNSAT _____

___*____ Performance step: (Denote critical steps with an asterisk)

Step 3:
Applicant determines Protective Action Recommendation for the conditions provided.

STANDARD: PAR - Evacuate 0-2 mile radius and 2-5 miles downwind.

CUE: If asked, winds are from the SE 2-3 knots - Steady. No adverse weather conditions predicted.

COMMENTS:

- Based on RA-02, Att 1, "Protective Action Chart."

SAT _____ UNSAT _____

Terminating cue: Applicant determines the EAL is a General Area Emergency & PAR is Evacuate 0-2 mile radius and 2-5 miles downwind.

Stop Time: _____

Re-evaluate after scenarios at the site. MAY need to replace w/ a stand-alone JPM.

VERIFICATION OF COMPLETION

Job Performance Measure No. _____

Examinee's Name:

Examiner's Name:

Date performed:

Facility Evaluator:

Number of attempts:

Time to complete:

Question Documentation:

Question:_____

_____

_____

_____

Response:_____

_____

_____

_____

_____

Result: SAT or UNSAT

Examiner's signature and date: _____ _____

Admin JPM Worksheet SRO A.4 Emergency Action Level/Protective Action Recommendation

APPLICANT'S COPY

Initial Conditions:
The plant experienced a hydraulic ATWS from 100% power. SLC did not inject. Power was reduced to <5% by lowering RPV level. All rods were manually inserted to shut down the Rx. Actions to restore RPV level and pressure control are in progress. Actions to stabilize primary and secondary containment parameters are in progress. The PASS Team is being briefed to take a sample. Field Monitoring Teams have been dispatched.

Specific parameters: Drywell radiation levels: ~ 4.6E+5 R/hr.
Containment Radiation levels: ~ 2.8E+5 R/hr.
Dose at site boundary: ~ 3 Rem/hr.

Initiating Cue:
You are the Shift Manager. Determine the Emergency Action Level/Protective Action Recommendation for the conditions provided and provide the justification for you classification.

NRC SUBMITTED WALKTHROUGH JPMS

FOR CLINTON THE WEEK OF JUNE 12, 2000

Facility: CLINTON POWER STATION
Exam Level (circle one): RO / SRO(I)

Date of Examination: 06/05/00
Operating Test No.: 2000301

B.1 Control Room Systems

	System / JPM Title	Type Code*	Safety Function
a.	RPIS/Simulate Bypassing an RPI in the Control Room	(C)(D)	7
b.	EDG/Parallel and Load DG 1A to Offsite Power for PMT	(S)(D)	6
c.	CRDM/Identify and Correct an Uncoupled Rod	(S)(N)(A)	1
d.	RCIC/Manually Start up RCIC	(S)(D)(A)	2
e.	MS/Reset Gp I, Open MSIVs, Control Stm Press	(S)(L)(M)	3
f.	LPCI/Manually Shutdown CTMT Spray w/ Initiation Signal Present	(S)(D)(A)	5
g.	Defeat Fuel Building Ventilation Interlocks After High Radiation Isolation.	(S)(N)	9

B.2 Facility Walk-Through

a.	DC Elec Dist/Shed DC Loads in Plant after SBO	(R)(N)	6
b.	Fire Protection/Locally Start the Diesel Driven Fire Pump	(D)(A)	8
c.	RHR/Place RHR in Shutdown Cooling at the RSP	(D)(L)	4

* Type Codes: (D)irect from bank, (M)odified from bank, (N)ew, (A)lternate path, (C)ontrol room, (S)imulator, (L)ow-Power, (R)CA

Facility: CLINTON POWER STATION
Exam Level (circle one): RO / SRO(I) / SRO(U)
Date of Examination: 06/05/00
Operating Test No.: 2000301

B.1 Control Room Systems

System / JPM Title	Type Code*	Safety Function
a. NOT USED		
b. NOT USED		
c. NOT USED		
d. RCIC/Manually Start up RCIC	(S)(D)(A)	2
e. NOT USED		
f. LPCI/Manually Shutdown CTMT Spray w/ Initiation Signal Present	(S)(D)(A)	5
g. Defeat Fuel Building Ventilation Interlocks After High Radiation Isolation.	(S)(N)	9

B.2 Facility Walk-Through

a. DC Elec Dist/Shed DC Loads in Plant after SBO	(R)(N)	6
b. NOT USED		
c. RHR/Place RHR in Shutdown Cooling at the RSP	(D)(L)	4

* Type Codes: (D)irect from bank, (M)odified from bank, (N)ew, (A)lternate path, (C)ontrol room, (S)imulator, (L)ow-Power, (R)CA

JPM Worksheet RO B.1.a Bypass Rod Position @ RACC

Facility: Clinton Task No: 011201C530

Task Title: Bypass a Rod Position at the Rod Action Control Cabinet (RACC)

Job Performance Measure No: RC-20 K/A Reference: 214000A401

Applicability: RO_X___ SRO_X___

Examinee: _____ NRC Examiner: _____

Facility Evaluator: _____ Date: _____

Method of testing:

Simulated Performance _____X_____ Actual Performance _____

Classroom _____ Simulator _____ Plant (MCR) __X____

READ TO THE EXAMINEE
I will explain the initial conditions, which steps to simulate or discuss, and provide initiating cues. When you complete the task successfully, the objective for this job performance measure will be satisfied.

Initial Conditions: During power operation, a rod block was received due to a failed channel position indication. Control Rod 32-29 was declared inoperable, inserted and hydraulically isolated per Technical Specification 3.1.3.5. Technical Specification 3.1.4.2.b.2 has been met. Rod 32-29 is the only inoperable control rod.

Task Standard: The position for control rod 32-29 is bypassed at the channel 1 and channel 2 RACC.

Required Materials: CPS No. 3304.02, ROD CONTROL AND INFORMATION SYSTEM, step 8.2.5

General References:

Initiating Cue: Bypass the position for rod 32-29 at the Channel 1 and Channel 2 Rod Action Control Cabinets (RACC) per CPS 3304.02 Rod Control and Information System, section 8.2.3.2.

Time Critical Task: ~~YES~~ / NO

Validation Time: ~10 Min

Simulator Set-up Conditions: None.

Start Time: _____

PERFORMANCE INFORMATION

_____ Performance step: (Denote critical steps with an asterisk)
APPLICANT OBTAINS COPY OF CPS NO. 3304.02, ROD CONTROL AND INFORMATION SYSTEM

STANDARD: Applicant obtains copy of CPS No. 3304.02.

CUE: After Applicant obtains copy, provide Applicant with a copy.

COMMENT:

SAT _____ UNSAT _____

_____ Performance step: (Denote critical steps with an asterisk)
Step 8.2.5, CPS 3304.02
OBTAIN ROD BYPASS FILE COVERS KEY (IN SM KEY LOCKER)
KEY # 14 (15); ROD BYPASS FILE - DIV 1 (2)

STANDARD: Obtain Rod Bypass File Covers Key (in SM key locker)
Key # 14 (15); Rod Bypass File - Div 1 (2)

COMMENT:

SAT _____ UNSAT _____

_____ Performance step: (Denote critical steps with an asterisk)
Step 8.2.5.1 BYPASS A ROD AT THE RACC(S) AS FOLLOWS:
Step 8.2.5.1.a) PRIOR TO BYPASSING ANY CONTROL ROD POSITION, REVIEW THE ITS/ORM IMPACT MATRIX (LIMITATION 6.6).

STANDARD: Review the ITS/ORM Impact Matrix (Limitation 6.6). NOTE- This was part of initial conditions.

CUE: If Applicant asks questions regarding Limitation 6.6, tell Applicant to review initial conditions of JPM. Examiner may need to provide amplifying cues as needed.

COMMENT:

SAT _____ UNSAT _____

___*____ Performance step: (Denote critical steps with an asterisk)

Step 8.2.5.1.b) ON ONE OF THE BYPASS SWITCH CARDS (CHANNEL 1 OR 2) AT THE APPROPRIATE RACC'S, POSITION THE TOGGLE SWITCHES AS PER APPENDIX A TO INSERT THE IDENTITY OF THE ROD 32-29 TO BE BYPASSED.

STANDARD: At 1H13-P651 (or P652 depending on which Channel was chosen) in the Main Control Room back panel area the SIMULATE inserting the correct position of the toggle switches for rod 32-29.

CUE: Examiner to provide feedback for position of switches as needed.

COMMENTS:

1. Ensure Applicant notifies the Control Room Operator prior to opening panel at 1H13-P651 (P652).

2. Ensure the Applicant indicates which toggle switch position corresponds to a one or to a zero, (0-toggle switch left, 1-toggle switch right). Record (R/L) Applicant's responses below.

Actual:
X4____ X3____ X2____ X1____ X0____
Y4____ Y3____ Y2____ Y1____ Y0____

Expected:
X4 L X3 R X2 L X1 R X0 L
Y4 L Y3 R Y2 L Y1 L Y0 R

SAT _____ UNSAT_____

_____ Performance step: (Denote critical steps with an asterisk)

Step 8.2.5.1.c) HAVE A SECOND LICENSED OPERATOR VERIFY ROD 32-29 SELECTION.

STANDARD: Applicant states that a second licensed operator has to verify the rod 32-29 selected.

CUE: If the rod identity is correct, cue the Applicant that the identification is correct and that control rod 32-29 is fully inserted.

If the rod identity is incorrect, cue the Applicant that the identification is incorrect.

COMMENT:

SAT _____ UNSAT _____

__*_____ Performance step: (Denote critical steps with an asterisk)
Step 8.2.5.1.d) PLACE THE ACTIVATE (TOP SWITCH) TO THE RIGHT.

STANDARD: Simulate placing the toggle switch at the top of the bypass switch card to the right.

CUE: Examiner to provide feedback for position of switch as needed.

COMMENT:

SAT _____ UNSAT _____

__*_____ Performance step: (Denote critical steps with an asterisk)
Step 8.2.5.1.e) If both Channels are required to by bypassed, than repeat previous three (3) steps (b - d) at the other RACC, then proceed to step 8.2.5.1.f.

Previous Step b)
ON THE OTHER BYPASS SWITCH CARDS (CHANNEL 1 OR 2) AT THE APPROPRIATE RACC'S, POSITION THE TOGGLE SWITCHES AS PER APPENDIX A TO INSERT THE IDENTITY OF THE ROD 32-29 TO BE BYPASSED.

STANDARD: At 1H13-P651 (or P652 depending on which Channel was chosen) in the Main Control Room back panel area the SIMULATE inserting the correct position of the toggle switches for rod 32-29.

CUE: Examiner to provide feedback for position of switches as needed.

COMMENTS:

1. Ensure Applicant notifies the Control Room Operator prior to opening panel at 1H13-P651 (P652).

2. Ensure the Applicant indicates which toggle switch position corresponds to a one or to a zero, (0-toggle switch left, 1-toggle switch right). Record (R/L) Applicant's responses below.

Actual:
X4____ X3____ X2____ X1____ X0____
Y4____ Y3____ Y2____ Y1____ Y0____

Expected:
X4_L_ X3_R_ X2_L_ X1_R_ X0_L_
Y4_L_ Y3_R_ Y2_L_ Y1_L_ Y0_R_

SAT _____ UNSAT _____

_____ Performance step: (Denote critical steps with an asterisk)

Step 8.2.5.1.e) If both Channels are required to by bypassed, than repeat previous three (3) steps (b - d) at the other RACC, then proceed to step 8.2.5.1.f.

Previous Step c)
HAVE A SECOND LICENSED OPERATOR VERIFY ROD 32-29 SELECTION.

STANDARD: Applicant states that a second licensed operator has to verify the rod 32-29 selected.

CUE: If the rod identity is correct, cue the Applicant that the identification is correct and that control rod 32-29 is fully inserted.

If the rod identity is incorrect, cue the Applicant that the identification is incorrect.

STANDARD:

SAT _____ UNSAT _____

___*____ Performance step: (Denote critical steps with an asterisk)

Step 8.2.5.1.e) If both Channels are required to by bypassed, than repeat previous three (3) steps (b - d) at the other RACC, then proceed to step 8.2.5.1.f.

Previous Step d) PLACE THE ACTIVATE (TOP SWITCH) TO THE RIGHT.

STANDARD: Simulate placing the toggle switch at the top of the bypass switch card to the right.

CUE: Examiner to provide feedback for position of switch as needed. :

COMMENT:

SAT _____ UNSAT _____

_____ Performance step: (Denote critical steps with an asterisk)

Step 8.2.5.1.f) DEPRESS THE POSITION BYPASS BUTTON ON THE OPERATOR'S CONTROL MODULE TO VERIFY THAT THE BYPASSED ROD IS INDICATED ON THE FULL CORE DISPLAY.

STANDARD: POSITION BYPASS button **SIMULATED** depressed.

CUE: ROD STATUS - POSITION BYP green light on.Green light for rod 32-29 ON.

COMMENT:

SAT _____ UNSAT _____

_____ Performance Step

Step 8.2.5.1.g) MAKE A MAIN CONTROL ROOM (MCR) JOURNAL ENTRY DOCUMENTING INDEPENDENT VERIFICATION OF POSITION BYPASS. BOTH OPERATORS SHALL INITIAL THE MCR JOURNAL ENTRY.

STANDARD: A SIMULATED MCR Journal entry is made.

CUE: Examiner to provide feedback that Journal entry was made.

Terminating cue:
Control Rod 32-29 position is bypassed at the channel 1 and channel 2 RACC.

Stop Time: _____

VERIFICATION OF COMPLETION

Job Performance Measure No. _____

Examinee's Name:

Examiner's Name:

Date performed:

Facility Evaluator:

Number of attempts:

Time to complete:

Question Documentation:

Question:_____
_____
_____
_____

Response:_____
_____
_____
_____
_____

Result: SAT or UNSAT

Examiner's signature and date: _____ _____

APPLICANT'S COPY

Initial Conditions:
During power operation, a rod block was received due to a failed channel position indication. Control Rod 32-29 was declared inoperable, inserted and hydraulically isolated per Technical Specification 3.1.3.5. Technical Specification 3.1.4.2.b.2 has been met. Rod 32-29 is the only inoperable control rod.

Initiating Cue:
Bypass the position for rod 32-29 at the Channel 1 and Channel 2 Rod Action Control Cabinets (RACC) per CPS 3304.02 Rod Control and Information System, section 8.2.5.

Facility: Clinton Task No: 011264C528

Task Title: Parallel and Load DG 1A to Offsite Power for Post-Maintenance Testing

Job Performance Measure No: 011264J002 K/A Reference: 264000A404

Applicability: RO__X__ SRO__X__

Examinee: _____ NRC Examiner: _____

Facility Evaluator: _____ Date: _____

Method of testing:

Simulated Performance _____ Actual Performance _____

Classroom _____ Simulator _____X_____ Plant _____

READ TO THE EXAMINEE
I will explain the initial conditions, which steps to simulate or discuss, and provide initiating cues. When you complete the task successfully, the objective for this job performance measure will be satisfied.

Initial Conditions:
DG 1A was started per CPS 3506.01, Section 8.1.3 and is running unloaded.

Task Standard:
Diesel Generator 1A is operating in parallel with off-site power per CPS 3506.01.

Required Materials: No special materials.

General References:
CPS No. 3506.01, DIESEL GENERATOR AND SUPPORT SYSTEMS, Section 8.1.3, Rev. 25

Initiating Cue:
Parallel and Load Diesel Generator 1A with off-site power. DG 1A was started per CPS 3506.01, Section 8.1.3 and is running unloaded.

Time Critical Task: NO

Validation Time: ~ 15 min.

Simulator Set-up Conditions:
Initialize to any suitable IC with DG in standby.

Start Time: _____

PERFORMANCE INFORMATION

_____ Performance step: (Denote critical steps with an asterisk)
Step 8.1.3.2, CPS 3506.01
Lineup offsite power to the respective 4160V bus.

Step 8.1.3.2.1, CPS 3506.01.
Total 4.16 KV Reserve Auxiliary Transformer (RAT) load shall be < 15,000 horsepower (HP) prior to paralleling a DG with the RAT. Use the table to determine the total 4.16 KV RAT load.

Running Horsepower Load from 4.16 KV Motors Powered by the RAT Load/Location

	Number of Motors Running	x	Motor Nameplate Horsepower	=	Total Horsepower
P680					
CD Pumps (1CD01PA/B/C/D)			x	1500	=
CB Pumps (1CB02PA/B/C/D)			x	3000	=
RR LFMGs			x	300	=
P870					
CA Pumps (1CA01PA/B)			x	600	=
P800					
CC Pumps (1CC01PA/B)			x	450	=
FC Pumps (1FC01PA/B)			x	400	=
SA Compressors (0/1/2SA01C)			x	600	=
WS Pumps (1WS01PA/B/C)			x	2000	=
WO Chillers (1WO01CA/B/C/D/E)			x	1316	=
P801					
VP Chillers (1VP04CA/B)			x	714=	
P601					
HPCS Pump (1E22-C001)			x	2500	=
LPCS Pump (1E21-C001)			x	1250	=
RHR Pumps (1E12-C001A/B/C)			x	700	=
SX Pumps (1SX01PA/B)			x	1500	=
RD Pumps (1C11-C001A/B)			x	400	=

TOTAL RUNNING HORSEPOWER

STANDARD: Operator completes the form and totals the above Horsepower readings and determines that Total RAT load is less than 15,000 HP.

COMMENT:

SAT _____ UNSAT _____

_____ Performance step: (Denote critical steps with an asterisk)
Step 8.1.3.2.2, CPS 3506.01

IF Total 4.16 KV RAT load <15,000 HP,
THEN 4160V Bus 1A1 may be powered by either the RAT or the ERAT-LTC during performance of this activity. Transfer 4160V Bus 1A1 to the desired off-site source per CPS No. 3501.01, HIGH VOLTAGE AUXILIARY POWER, if needed.

STANDARD: Operator verifies that 4160 Bus 1A1 is powered by the RAT per 3501.01, section 8.1.3.

COMMENT:

SAT _____ UNSAT _____

_____ Performance step: (Denote critical steps with an asterisk)
Step 8.1.3.2.3, CPS 3506.01

IF Total 4.16 KV RAT load ≥15,000 HP and it is desired to parallel the diesel generator with the RAT,
THEN Reduce total 4.16 KV RAT load to <15,000 HP.

a) 4.16KV Vital Buses **NOT** being paralleled with the DG may be transferred to the ERAT-LTC, per CPS No. 3501.01, HIGH VOLTAGE AUXILIARY POWER,
AND/OR
b) Non-vital loads powered by 4160V Busses 1A and 1B may be secured.

STANDARD: No operator action required, RAT load is <15,000 HP.

COMMENT:

SAT _____ UNSAT _____

_____ Performance step: (Denote critical steps with an asterisk)
Step 8.1.3.2.4, CPS 3506.01

IF The diesel generator is going to be paralleled with the RAT **and** Switchyard breaker 4502 or 4522 is open. (NOTE - breaker 4502 is OPEN.)
THEN Turn OFF the auto recloser for the other breaker (i.e. 4522 or 4502).

STANDARD: Operator simulates taking the handswitch for breaker 4522 auto recloser to OFF.

CUE: 4522 auto recloser handswitch is in OFF

COMMENTS: Control panel not simulated.

_____ Performance step: (Denote critical steps with an asterisk)
Step 8.1.3.2.6, CPS 3506.01
Inform the Electrical Supply Supervisor that a diesel generator will be paralleled with off site power.

STANDARD: Operator notifies Electrical Supply Supervisor that a diesel generator will be paralleled with off-site power.

CUE: As the Electrical Supply Supervisor, acknowledge that a diesel generator will be paralleled with off-site power.

COMMENTS:

SAT _____ UNSAT _____

__*__ Performance step: (Denote critical steps with an asterisk)
Step 8.1.3.6, CPS 3506.01
Place DG 1A Output BKR SYNC switch to ON position.

STANDARD: Operator places DG 1A SYNC SWITCH to ON.

COMMENT:

SAT _____ UNSAT _____

_____ Performance step: (Denote critical steps with an asterisk)

NOTE

Steps 8.1.3.7 and 8.1.3.8 may be done concurrently and may require adjustments periodically to maintain required parameters.

Step 8.1.3.7, CPS 3506.01
Adjust DG 1A Incoming voltage with DG 1A Generator Voltage Regulator control switch so that Incoming voltage is slightly higher than Running voltage.

STANDARD: Operator adjusts DG 1A voltage regulator so that incoming voltage is slightly higher (< 100 volts) than running voltage.

COMMENT:

SAT _____ UNSAT _____

_____ Performance step: (Denote critical steps with an asterisk)

Step 8.1.3.8, CPS 3506.01

Adjust DG 1A speed with DG 1A Governor control switch such that the DG frequency is slightly greater than bus frequency as indicated by a slow clockwise rotation of the synchroscope.

STANDARD: Operator adjusts DG 1A governor control switch so DG frequency is slightly greater than bus frequency (indicated by slow rotation in the clockwise direction).

COMMENT:

SAT _____ UNSAT _____

__*__ Performance step: (Denote critical steps with an asterisk)

CAUTION

- DG may trip on reverse power unless DG is loaded, to at least 200 KW, immediately following DG output breaker closure.
- Placing DG 1A Output Bkr Sync switch to OFF, while DG is in parallel, will trip the DG output breaker.

Step 8.1.3.9, CPS 3506.01

WHEN the synchroscope's pointer nears the vertical (12 o'clock) position and the synchronizing lamps go dark,

1. Close DG 1A Output Bkr.
2. Immediately load DG 1A to at least 200 KW.

STANDARD: When synchroscope pointer nears 12 o'clock, operator takes handswitch for DG 1A output breaker to CLOSE and observes RED light ON.

Operator immediately loads diesel by taking governor control switch to RAISE.

COMMENT:

SAT _____ UNSAT _____

CAUTION

- To ensure operability and to prevent overloading of the Emergency Diesel Generators, the following Continuous Load Ratings (power factor(pf) = 0.8) should not be exceeded, except as directed by approved surveillance tests: DG 1A 3869KW
- The DG shall also be operated within the limits of Appendix A, DG 1A(1B) REACTIVITY LOAD CAPABILITY CURVE.

NOTE

- Steps 8.1.3.10 and 8.1.3.11 may be performed concurrently and intermittently to achieve required parameters.

__*__ Performance step: (Denote critical steps with an asterisk)
Step 8.1.3.10, CPS 3506.01
Gradually load DG 1A, at a rate of approximately 1000 KW per minute to the desired load with DG 1A Governor control switch.

STANDARD: Operator gradually loads DG 1A to 3869KW by taking governor switch to the RAISE position.

COMMENT:

SAT _____ UNSAT _____

_____ Performance step: (Denote critical steps with an asterisk)
Step 8.1.3.11, CPS 3506.01
Maintain DG 1A VARs within the limits of Appendix A, DG 1A(1B) REACTIVITY LOAD CAPABILITY CURVE using the DG 1A Voltage Regulator control switch.

STANDARD: Operator maintains DG 1A VARS within the limits of Appendix A, DG 1A(1B) REACTIVITY LOAD CAPABILITY CURVE using the DG 1A voltage regulator switch.

COMMENT: If the Examiner is unsure how the Applicant has maintained the VARs with in the REACTIVITY LOAD CAPABILITY CURVE, the Examiner should ask the Applicant for an explanation.

SAT _____ UNSAT _____

Terminating cue: Diesel Generator 1A is operating in parallel with off-site power.

STOP TIME: _____

VERIFICATION OF COMPLETION

Job Performance Measure No. _____

Examinee's Name:

Examiner's Name:

Date performed:

Facility Evaluator:

Number of attempts:

Time to complete:

Question Documentation:

Question:_____
_____
_____
_____

Response:_____
_____
_____
_____
_____

Result: SAT or UNSAT

Examiner's signature and date: _____ _____

APPLICANT'S COPY

Initial Conditions:
DG 1A was started per CPS 3506.01, Section 8.1.3 and is running unloaded.

Initiating Cue:
Parallel and Load Diesel Generator 1A with off-site power. DG 1A was started per CPS 3506.01, Section 8.1.3 and is running unloaded.

JPM Worksheet B.1.c Recouple a Control Rod

Facility: Clinton Task No: _____

Task Title: Identify Uncoupled Control Rod During PMT and Recouple the Rod - Atl Path.

Job Performance Measure No: NEW K/A Reference: 201003A202

Applicability: RO__X__ SRO_X___

Examinee: _____ NRC Examiner: _____

Facility Evaluator: _____ Date: _____

Method of testing:

Simulated Performance _____ Actual Performance __X_____

Classroom _____ Simulator ____X_____ Plant _____

READ TO THE EXAMINEE
I will explain the initial conditions, which steps to simulate or discuss, and provide initiating cues. When you complete the task successfully, the objective for this job performance measure will be satisfied.

Initial Conditions:
Plant operating at 100% power (power level is not important). Reactor Operator directed to perform the applicable portion of surveillance CPS 9011.01, CONTROL ROD/POSITION INDICATION OPERABILITY, for rod (XX-YY) for Post Maintenance Testing (PMT).

Task Standard:
Reactor Operator identifies that the rod is uncoupled and recouples the rod.

Required Materials:
Plant Monitoring System (PMS) Control Rod Position printout.
Core Map.

General References:
9011.01, CONTROL ROD/POSITION INDICATION OPERABILITY. (coupling verification surveillance)
CPS 3304.02, ROD CONTROL AND INFORMATION SYSTEM (RC&IS).

Initiating Cue:
Reactor Operator directed to perform surveillance CPS 9011.01, CONTROL ROD/POSITION INDICATION OPERABILITY, for rod (XX-YY) for post maintenance testing (PMT).

Time Critical Task: NO Validation Time:

Simulator Set-up Conditions:
Initialize to any suitable IC. Reactor power level is not important.

Start Time: _____

PERFORMANCE INFORMATION

_____ Performance step: (Denote critical steps with an asterisk)

Step 8.1 - 8.1.4 CPS 9011.01, CONTROL ROD/POSITION INDICATION OPERABILITY.
Obtain a Plant Monitoring System (PMS) Control Rod Position printout, using either OD-7, Option 2 or OD-7 Option 4.

From the OD-7 edit, determine which control rods are not required to be tested because they are not withdrawn.

Identify any control rods which are disarmed.

Identify any control rods which are PARTIALLY withdrawn.

On the CORE MAP (page 7):
Mark disarmed control rods with **"DA".**
Mark FULLY inserted control rods with **"N/A"**.
Mark partially withdrawn control rods with **"P/"**(if exercising PARTIALLY inserted rods).
Mark partially withdrawn control rods with **"N/A"**(if not exercising PARTIALLY inserted rods).

STANDARD: No operator action required. PMT for rod XX-YY.

COMMENT:

SAT _____ UNSAT _____

_____ Performance step: (Denote critical steps with an asterisk)

Step 8.2 CPS 9011.01
Exercise of FULLY (PARTIALLY) Withdrawn Control Rods

Step 8.2.1 CPS 9011.01
Verify MAPRAT < 0.96.
If MAPRAT > 0.96, then a power reduction shall be required to achieve MAPRAT < 0.96 prior to testing any PARTIALLY withdrawn control rods.

STANDARD: Operator verifies MAPRAT < 0.96

COMMENT: (MAPRAT is expected to be < 0.96)

SAT _____ UNSAT _____

__*__ Performance step: (Denote critical steps with an asterisk)

Step 8.2.2 CPS 9011.01

Select and insert the desired rod(s) one notch, noting proper position indication tracking.

STANDARD: Operator selects and inserts rod XX-YY

COMMENT:

SAT _____ UNSAT _____

__*__ Performance step: (Denote critical steps with an asterisk)

Step 8.2.3 CPS 9011.01

Withdraw the selected rod(s) one notch to original position

- Observe proper rod position indication tracking to the original rod position.

STANDARD: Operator observes that the rod is uncoupled. See Annunciator 5006-5G, "Rod Overtravel," (on the 680 panel) and **OTHER INDICATIONS????**

Operator reports uncoupled rod to CRS.

Operator refers to annunciator response procedure, CPS 5006.05.

COMMENTS:

SAT _____ UNSAT _____

_____ Performance step: (Denote critical steps with an asterisk)

Step 1, Operator Action, Annunciator Response Procedure CPS 5006.05.

Operator presses the ROD UNCOUPLED button on the Display Section of the OCM to display the rod that alarmed.

STANDARD: Operator presses the ROD UNCOUPLED button on the Display Section of the OCM

COMMENTS:

SAT _____ UNSAT _____

_____ Performance step: (Denote critical steps with an asterisk)

Step 2, Operator Action, Annunciator Response Procedure CPS 5006.05.
Refer to CPS No. 3304.02, ROD CONTROL AND INFORMATION SYSTEM (RC&IS), ROD COUPLING section for direction on recoupling the rod.

STANDARD: Operator obtains and reads CPS No. 3304.02, ROD CONTROL AND INFORMATION SYSTEM (RC&IS), ROD COUPLING (section 8.2.6) for direction on recoupling the rod.

COMMENT:

SAT _____ UNSAT _____

__*__ Performance step: (Denote critical steps with an asterisk)

Step 8.2.6.1, CPS No. 3304.02, RC&IS.
As directed by the SM/CRS:
a. Verify that the INDIVID DRIVE light is energized on the OCM. If not, select individual drive by depressing DRIVE MODE push-button

STANDARD: Operator selects individual drive by depressing DRIVE MODE push-button on the OCM, if needed

CUE: Direct the operator to select the individual drive.

COMMENT:

SAT _____ UNSAT _____

__*__ Performance step: (Denote critical steps with an asterisk)

Step 8.2.6.1, CPS No. 3304.02, RC&IS.
b. Insert the drive one or two notches in an attempt to recouple the rod.

STANDARD: Operator inserts rod 1 or 2 notches.

COMMENT:

SAT _____ UNSAT _____

__*__ Performance step: (Denote critical steps with an asterisk)

Step 8.2.6.1, CPS No. 3304.02, RC&IS.

c. Determine if the rod has recoupled by fully withdrawing the drive not to exceed the rod's in-sequence position.

STANDARD: The operator withdraws the rod and the Rod Overtravel annunciator (5006-5G on the 680 panel) does not alarm.

COMMENT: **ARE THERE OTHER INDICATIONS???**

SAT _____ UNSAT _____

_____ Performance step: (Denote critical steps with an asterisk)

Step 8.2.6.1, CPS No. 3304.02, RC&IS.

d. If the rod has recoupled, return to normal operation.

STANDARD: Operator reports that the rod has recoupled.

CUE:

COMMENT:

SAT _____ UNSAT _____

Terminating cue: Operator reports that the rod has recoupled.

Stop Time: _____

VERIFICATION OF COMPLETION

Job Performance Measure No. _____

Examinee's Name:

Examiner's Name:

Date performed:

Facility Evaluator:

Number of attempts:

Time to complete:

Question Documentation:

Question:_____
_____
_____
_____

Response:_____
_____
_____
_____
_____

Result: SAT or UNSAT

Examiner's signature and date: _____ _____

APPLICANT'S COPY

Initial Conditions:
Plant operating at 100% power (power level is not important). Reactor Operator directed to perform the applicable portion of surveillance CPS 9011.01, CONTROL ROD/POSITION INDICATION OPERABILITY, for rod (XX-YY) for Post Maintenance Testing (PMT).

Initiating Cue:
Reactor Operator directed to perform surveillance CPS 9011.01, CONTROL ROD/POSITION INDICATION OPERABILITY, for rod (XX-YY) for post maintenance testing (PMT).

Facility: Clinton Task No: 011217C529

Task Title: Manually Startup RCIC System, Logic Not Available (CPS No. 3310.01) - Alt. Path

Job Performance Measure No: 011217J002 K/A Reference: 217000A404

Applicability: RO__X__ SRO_X____

Examinee: _____ NRC Examiner: _____

Facility Evaluator: _____ Date: _____

Method of testing:

Simulated Performance _____ Actual Performance __X_____

Classroom _____ Simulator ____X_____ Plant _____

READ TO THE EXAMINEE
I will explain the initial conditions, which steps to simulate or discuss, and provide initiating cues. When you complete the task successfully, the objective for this job performance measure will be satisfied.

Initial Conditions: An emergency condition exists. Manually initiate RCIC using the manual initiation pushbutton.

Task Standard: RCIC is manually initiated and is injecting into the reactor vessel.

Required Materials: None

General References: CPS No. 3310.01, REACTOR CORE ISOLATION COOLING (RI)

Initiating Cue: An emergency condition exists. Manually initiate RCIC using the manual initiation pushbutton.

Time Critical Task: YES

Validation Time: ~ 5 minutes

Simulator Set-up Conditions:
1. Initialize to any suitable IC with RCIC in Standby.
2. Insert malfunction to disable RCIC Automatic Initiation.
3. Insert manual SCRAM.
4. Take manual control of the 1FW004 valve and trip both Turbine Drive Reactor Feed Pumps. Maintain RPV level between Level 2 and 3 (preferably low in the band).
5. Insert an Instructor Override (I/O) to maintain the RCIC Manual Initiation Pushbutton NOT DEPRESSED.

Start Time: _____

PERFORMANCE INFORMATION

_____ Performance step: (Denote critical steps with an asterisk)

Step 1: Arm, depress and HOLD depressed (for ~ 10 seconds) RCIC MANUAL INITIATION push-button until 1E51-F045 comes off its shut seat.

STANDARD: Recognizes failure of RCIC to initiate and proceeds to manual startup with logic not available.

CUE: If requested, direct RCIC to be started manually.

COMMENT:

SAT _____ UNSAT _____

_____ Performance step: (Denote critical steps with an asterisk)

Step 2: Start Gland Seal Air Compressor.

STANDARD: Red light ON for the Gland Seal Air Compressor.

COMMENT:

SAT _____ UNSAT _____

__*__ Performance step: (Denote critical steps with an asterisk)

Step 3: OPEN 1E51-F046, RCIC PMP SUPP TO TURB LUBE OIL CLR.

STANDARD: Red light ON for 1E51-F046.

COMMENT:

SAT _____ UNSAT _____

_____ Performance step: (Denote critical steps with an asterisk)

Step 4: Trip the main turbine and both reactor feed pump turbines.

STANDARD:

1. Green TRIPPED indicating lights ON for the Main Turbine.
2. Green lights ON for RFPT A and B, HP and LP Stop Valves.

COMMENTS:

SAT _____ UNSAT _____

NOTE

The following step should be promptly performed to minimize the time that RCIC Pump/Turbine running on Minimum Flow.

_*___ Performance step: (Denote critical steps with an asterisk)

Step 5: OPEN 1E51-F095, RCIC TURB STM SUPP BYPASS VALVE TO START RCIC; THEN IN ~ 10 SECONDS, OPEN BOTH
1E51-F045, RCIC TURB STM SUPP SHUTOFF VALVE.
1E51-F013, RCIC PUMP DISCH TO RX OUTBD ISOL VALVE.

STANDARD:

1. Red lights ON for 1E51-F095,1E51-F045, & 1E51-F013.
2. RCIC Turbine speed increasing on E51C002-1
3. RCIC pump discharge pressure increasing on E51-R601
4. RCIC flow increasing on 1E51R606 and 1E51R600.

COMMENTS: This is the end of the TIME CRITICAL portion of the JPM.
TIME:_____

SAT _____ UNSAT_____

____ Performance step: (Denote critical steps with an asterisk)

Step 6: Verify proper operation of 1E51-F019, RCIC Pump Min Flow Recirc to Suppr Pool.

STANDARD:

1. Opens whenever RCIC flow is < 120 gpm & discharge pressure is > 125 psig - Red light ON.
2. Shuts whenever RCIC flow is > 240 gpm - Green light ON.

COMMENTS:

SAT _____ UNSAT _____

_____ Performance step: (Denote critical steps with an asterisk)

Step 7: Verify 1E51-F004 and F005, RCIC Turb Exh Drn To RF First (Second) Isol Valves shut.

STANDARD: Green lights ON for 1E51-F004 and 1E51-F005.

COMMENTS:

SAT _____ UNSAT _____

_____ Performance step: (Denote critical steps with an asterisk)

Step 8: Verify 1E51-F025 and F026, RHR & RCIC Stm Supp First (Second) Drn Isol Vlvs shut.

STANDARD: Green lights ON for 1E51-F025 and 1E51-F026

COMMENTS:

SAT _____ UNSAT _____

_____ Performance step: (Denote critical steps with an asterisk)

Step 9: Verify RCIC Pmp Rm Sply Fan, 1VY04C running.

STANDARD: Red light ON for 1VY04C (located on P801)

COMMENTS:

SAT _____ UNSAT _____

_____ Performance step: (Denote critical steps with an asterisk)

Step 10: Monitor RPV level. Adjust RCIC Pump Flow Cont, 1E51-R600, as necessary to maintain desired RPV level.

STANDARD: IF RCIC Flow Controller is shifted to Manual.
THEN Maintains RCIC Turbine speed <1500 rpm.

CUE: If asked, direct that the RCIC Flow Controller remain in AUTO.
If asked, direct that level be maintained between Levels 3 and 8.

COMMENTS:

SAT _____ UNSAT _____

Terminating cue: The RCIC system is injecting water into the reactor vessel.

Stop Time: _____

VERIFICATION OF COMPLETION

Job Performance Measure No. _____

Examinee's Name:

Examiner's Name:

Date performed:

Facility Evaluator:

Number of attempts:

Time to complete:

Question Documentation:

Question:_____
_____
_____
_____

Response:_____
_____
_____
_____
_____

Result: SAT or UNSAT

Examiner's signature and date: _____ _____

APPLICANT'S COPY

Initial Conditions:
An emergency condition exists. Manually initiate RCIC using the manual initiation pushbutton.

Initiating Cue:
An emergency condition exists. Manually initiate RCIC using the manual initiation pushbutton.

JPM Worksheet B.1.e Reset Gp I, Open MSIVs, & Control Pressure w/ Stm Bypass Valves

Facility: Clinton Task No: 015200C502

Task Title: Reset Group I Isolation, Open MSIVs, & Establish Automatic Pressure Control with Steam Bypass Valves

Job Performance Measure No: 014200J005 K/A Reference: 239001A401 & A404

Applicability: RO_X___ SRO_X___

Examinee: _____ NRC Examiner: _____

Facility Evaluator: _____ Date: _____

Method of testing:

Simulated Performance _____ Actual Performance __X_____

Classroom _____ Simulator _____X_____ Plant _____

READ TO THE EXAMINEE
I will explain the initial conditions, which steps to simulate or discuss, and provide initiating cues. When you complete the task successfully, the objective for this job performance measure will be satisfied.

Initial Conditions:
A reactor scram and Group 1 Isolation occurred during surveillance testing on the Low Main Steam Line Pressure RPS circuits. Plant systems responded as designed. Plant conditions are as you see them.

Task Standard: Group 1 Isolation is Reset, MSIVs are Open, and RPV pressure is being automatically controlled at about 850 psig with Bypass Valves.

Required Materials: None

General References:
CPS No. 4001.02, AUTO ISOLATION
CPS No. 4411.09, EOP RPV PRESSURE CONTROL SOURCES

Initiating Cue:
Reset the Group 1 Isolation signal in accordance with CPS No. 4001.02, Automatic Isolation section 4.10.3. Open the MSIVs and establish automatic RPV pressure control at about 850 psig with the Steam Bypass Valves in accordance with CPS No. 4411.09, EOP RPV Pressure Control Sources.

Time Critical Task: NO

Validation Time:

JPM Worksheet B.1.e Reset Gp I, Open MSIVs, & Control Pressure w/ Stm Bypass Valves

Simulator Set-up Conditions: (from JPM 014200J005)

- Initialize to any IC with MSIV's open.
- Insert a manual Scram using the Manual Scram Pushbuttons on P680 (Leave the Mode switch in RUN).
- Lower reactor pressure using Bypass Valves until the Group 1 Isolation occurs.
- Take the Mode Switch to Shutdown.
- Open an SRV as necessary to maintain reactor pressure less than 1000 psig.
- Lineup Auxiliary Steam to the GS header.
- Establish condenser vacuum with a Condenser Vacuum Pump or ensure a vacuum exists.

Start Time: _____

PERFORMANCE INFORMATION

__*___ Performance step: (Denote critical steps with an asterisk)
Step 1 CPS 4001.02, step 4.10.3.1.b) 1)
Resetting Isolation NOT Caused by HVAC High Rad Signals.

Place the GROUP 1 valve control switches listed in CPS No. 4001.02C001 annotated with an asterisk (*) to the CLOSE position. Valves indicated with a double asterisk (**) shall be positioned to the OPEN position.

MSIVs (Inboard) 1B21-F022A, B, C, D AND (Outboard) 1B21-F028A, B, C, D Control Switches In CLOSE. The Inboard & Outboard MSIVs are CLOSED.

Main Drain & MSIV Bypass inboard & outboard valves (1B21-FO16 & 19) AND MSL A, B, C, & D Outboard MSIV Before Seat Drain Valves 1B21-FO67A, B, C, & D Control Switches In CLOSE.

STANDARD: All MSIV's control switches in CLOSE.
Green lights ON for INBD and OUTBD MSIV's
The Inboard & Outboard MSIVs are CLOSED.

Main Drain & MSIV Bypass inboard & outboard valves AND MSL A, B, C, & D Outboard MSIV Before Seat Drain Valves control switches in CLOSE and Green Lights ON.
Main Drain & MSIV Bypass inboard & outboard valves AND MSL A, B, C, & D Outboard MSIV Before Seat Drain Valves are CLOSED.

COMMENT:

SAT _____ UNSAT _____

_____ Performance step: (Denote critical steps with an asterisk)
Step 2 CPS 4001.02, step 4.10.3.1.b) 1)

Place the Cnmt Floor Drain Valve RF021 and RF022 control switches in CLOSE.

STANDARD: Control switches for RF021 and RF022 in CLOSE.
Green lights ON for RF021 and RF022.
Valves RF021 and RF022 CLOSED.

COMMENT:

SAT _____ UNSAT _____

__*__ Performance step: (Denote critical steps with an asterisk)
Step 3 CPS 4001.02, step 4.10.3.1.b) 2)
DEPRESS THE OUTBD ISOLATION SEAL-IN RESET PUSHBUTTON AND INBD ISOLATION SEAL-IN RESET PUSHBUTTON

STANDARD: Inbd and Outbd Isolation Seal-In Reset pushbuttons depressed.

COMMENT:

SAT _____ UNSAT_ _____

__*__ Performance step: (Denote critical steps with an asterisk)
Step 4 CPS 4411.09, step 2.2.2.c)
Regardless if Circ Water (CW) is available or not:
OK to position Div 1 (2, 3, 4) Condenser Low Vacuum Bypass Switches to BYPASS to Clear Group 1 interlocks.

STANDARD: Position Div 1 (2, 3, 4) Condenser Low Vacuum Bypass Switches to BYPASS.

COMMENT:

SAT _____ UNSAT_ _____

_____ Performance step: (Denote critical steps with an asterisk)
Step 5 CPS 4411.09, step 2.2.2.c) 1)
Establish vacuum per CPS No. 3112.01, CONDENSER VACUUM (CA).

STANDARD: Verifies that vacuum is established using DCS displays or P870 Vacuum Recorder.

COMMENT:

SAT _____ UNSAT _____

____ Performance step: (Denote critical steps with an asterisk)
Step 6 CPS 4411.09, step 2.2.2.d)
Set/Verify Pressure Set Point at least 50 psid > RPV pressure (to avoid inadvertent bypass valve operation).

STANDARD: Sets/Verifies Pressure Set Point at least 50 psid > RPV pressure.

COMMENTS:

SAT _____ UNSAT _____

_*__ Performance step: (Denote critical steps with an asterisk)
Step 7 CPS 4411.09, step 2.2.2.e)
Open Main Steam Shutoff Valves, 1B21-FO98A, B, C, & D

STANDARD: Control switches for 1B21-FO98A, B, C, & D to OPEN.
Red lights ON for 1B21-FO98A, B, C, & D.
Valves 1B21-FO98A, B, C, & D OPEN.

COMMENTS:

SAT _____ UNSAT _____

*___ Performance step: (Denote critical steps with an asterisk)
Step 8 CPS 4411.09, step 2.2.2.f)
Open the Outboard MSIVs, 1B21-F028A, B, C, D.

STANDARD: Outboard MSIV's control switches in OPEN
Red lights ON for Outboard MSIV's
Outboard MSIV's OPEN.

NOTE - If necessary, the procedure allows Opening the following drain valves to assist in the attempt to open the outboard MSIVs:
MSL A, B, C, & D Outboard MSIV Before Seat Drain Valves 1B21-FO67A, B, C, & D.
Outboard MSIV Before Seat Warmup Drain Valve, 1B21-FO68.
Outboard MSIV Before Seat Normal Drain Valve, 1B21-FO69.

COMMENTS:

SAT _____ UNSAT_____

__*__ Performance step: (Denote critical steps with an asterisk)
Step 9 CPS 4411.09, step 2.2.2.g)
Equalize Around and Open the MSIVs by opening:
Main Drain & MSIV Bypass inboard valve,1B21-FO16.
Main Drain & MSIV Bypass outboard valve, 1B21-FO19.
MSIV Bypass Valve for MSL Warmup, 1B21-FO20.

STANDARD: 1B21-FO16, -FO19, & -FO20 Control Switches in OPEN.
Red lights ON for 1B21-FO16, -FO19, & -FO20.
Valves 1B21-FO16, -FO19, & -FO20 OPEN.

COMMENTS:

SAT _____ UNSAT _____

_*__ Performance step: (Denote critical steps with an asterisk)
Step 10 CPS 4411.09, step 2.2.2.h)
Establish a DP < 200 psid across the MSIVs.

NOTE - The procedure allows Closing the following valves to assist in the attempt:
Main Steam Low Point Drain Shutoff Valve, 1B21-FO15.
Inboard MSIV Before Seat Warmup Drain Valve, 1B21-FO21.
Inboard MSIV Before Seat Warmup Drain Valve, 1B21-FO33.
Outboard MSIV Before Seat Warmup Drain Valve, 1B21-FO68.
Outboard MSIV Before Seat Normal Drain Valve, 1B21-FO69.
Main Steam Low Point Warmup Drain Valve, 1B21-FO70.
Main Steam Low Point Normal Drain Valve, 1B21-FO71.
Main Turbine Stop Valves 1, 2, 3, & 4 Drain Valves, 1TD-SV1, 3, 5, & 7.
(Turbine Generator needs to be reset to Close the stop valves.)

STANDARD: a DP of less than 200 psid has been established across the MSIVs.

COMMENTS:

SAT _____ UNSAT _____

_*__ Performance step: (Denote critical steps with an asterisk)
Step 11 CPS 4411.09, step 2.2.2.i)
Open the Inboard MSIVs, 1B21-FO22A, B, C, & D.

STANDARD: Inboard MSIV's control switches in OPEN
Red lights ON for Inboard MSIV's
Inboard MSIV's OPEN

COMMENTS:

SAT _____ UNSAT _____

_*__ Performance step: (Denote critical steps with an asterisk)
Step 12 CPS 4411.09, step 2.2.1.b)
Open Main Turbine Bypass Valves as necessary to establish and maintain the desired pressure by Depressing the Pressure Set Point Decrease push-button and lower the setpoint to about 850 psig.

STANDARD: Pressure Set Point is lowered to about 850 psig.
Main Turbine Bypass Valves Open.

COMMENTS:

SAT _____ UNSAT _____

_*__ Performance step: (Denote critical steps with an asterisk)
Step 13
Verify proper operation of Bypass Valves.

STANDARD: Bypass valves cycle to control RPV pressure at about 850 psig.

COMMENTS:

SAT _____ UNSAT _____

Terminating cue:
The Bypass Valves are automatically controlling RPV pressure at about 850 psig.

Stop Time: _____

VERIFICATION OF COMPLETION

Job Performance Measure No. _____

Examinee's Name:

Examiner's Name:

Date performed:

Facility Evaluator:

Number of attempts:

Time to complete:

Question Documentation:

Question:_____
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Response:_____
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_____
_____

Result: SAT or UNSAT

Examiner's signature and date: _____ _____

APPLICANT'S COPY

Initial Conditions:
A reactor scram and Group 1 Isolation occurred during surveillance testing on the Low Main Steam Line Pressure RPS circuits. Plant systems responded as designed. Plant conditions are as you see them.

Initiating Cue:
Reset the Group 1 Isolation signal in accordance with CPS No. 4001.02, Automatic Isolation section 4.10.3. Open the MSIVs and establish automatic RPV pressure control at about 850 psig with the Steam Bypass Valves in accordance with CPS No. 4411.09, EOP RPV Pressure Control Sources.

JPM Worksheet B.1.f Containment Spray Shutdown - Alt. Path

Facility: Clinton Task No: 015200C864

Task Title: Containment Spray Shutdown - Initiation Signal Present - Alt. Path

Job Performance Measure No: 015200J075 K/A Reference: 226001A407

Applicability: RO__X__ SRO_X___

Examinee: _____ NRC Examiner: _____

Facility Evaluator: _____ Date: _____

Method of testing:

Simulated Performance _____ Actual Performance _____

Classroom _____ Simulator _____X_____ Plant _____

READ TO THE EXAMINEE
I will explain the initial conditions, which steps to simulate or discuss, and provide initiating cues. When you complete the task successfully, the objective for this job performance measure will be satisfied.

Initial Conditions: RHR Loop A Containment Spray was manually initiated. Containment Spray is no longer needed. Shutdown Containment Spray.

Task Standard: Containment Spray is secured.

Required Materials: None

General References: CPS No. 3312.01, RESIDUAL HEAT REMOVAL, Sections 8.1.7 & 8

Initiating Cue: RHR Loop A Containment Spray was manually initiated. Containment Spray is no longer needed. Shutdown Containment Spray.

Time Critical Task: YES / NO

Validation Time:

Simulator Set-up Conditions:

Start Time: _____

Q: Does method of initiation affect method of reset?
A: Will determine at site & set initial conditions to match JPM output.

PERFORMANCE INFORMATION

__*___ Performance step: (Denote critical steps with an asterisk)

CAUTION

Clearing CNMT spray initiation signal with a LPCI initiation signal present will result in re-establishing LPCI flow to the RPV if the RPV pressure is < 472 psig (1E12-F042A/B perm to open).

Step 8.1.7.1, CPS 3312.01

Reset CNMT spray initiation logic by depressing CNMT SPRAY A SEAL-IN RESET push-button, and verify CNMT SPRAY A SEAL-IN ready to reset light off.

STANDARD:

- Operator depresses CNMT SPRAY A SEAL-IN RESET pushbutton.
- Operator observes that the CNMT SPRAY A SEAL-IN reset light remain ON.
- Operator reports that the initiation signal will **NOT** reset.

CUE: If Applicant asks for direction, the Examiner will act as CRS, and ask the Applicant for a recommendation. Note that Step 8.1.7.2 directs the operator to secure Containment Spray using Section 8.1.8.

COMMENT:

SAT _____ UNSAT_____

__*____ Performance step: (Denote critical steps with an asterisk)

Step 8.1.7.2, CPS 3312.01

If CNMT SPRAY A SEAL-IN ready to reset light was not ON, or if initiation signal will not reset, refer to section 8.1.8 , CNMT Spray Shutdown - Initiation Signal Present.

STANDARD: Applicant refers to Section 8.1.8 , CNMT Spray Shutdown - Initiation Signal Present, to continue with the task.

COMMENT:

SAT _____ UNSAT_____

__*____ Performance step: (Denote critical steps with an asterisk)

CAUTION

Following a RHR Pump A trip with a CNMT spray initiation signal present, the RHR pump breaker will not re-close on any further pump re-starts.

RHR Pump Bkr is reset by simultaneously depressing:

- CNMT SPRAY A DELAY TIMER RESET and
- CNMT SPRAY A SEAL-IN RESET.

Step 8.1.8, CPS 3312.01

Stop CNMT spray by simultaneously depressing:

- CNMT SPRAY A DELAY TIMER RESET (Arm & Depress), and
- CNMT SPRAY A SEAL-IN RESET

STANDARD:

Operator rotates collar then simultaneously depresses CNMT SPRAY A DELAY TIMER RESET and CNMT SPRAY A SEAL-IN RESET pushbuttons.

COMMENT:

SAT _____ UNSAT _____

_*__ Performance step: (Denote critical steps with an asterisk)

Step 8.1.8.a, CPS 3312.01

If CNMT spray has stopped, then the 10 minute initiation time delay must be continuously reset to prevent further initiation, until the fault can be found and corrected.

STANDARD: Operator determines that Containment Spray HAS NOT stopped.

COMMENT:

SAT _____ UNSAT _____

__*__ Performance step: (Denote critical steps with an asterisk)

Step 8.1.8.b, CPS 3312.01

If resetting 10 minute initiation time delay did not stop CNMT spray, then stop RHR Pump A, 1E12-C002A for affected loop.

STANDARD:

- Operator takes handswitch 1E12-C002A to STOP and observes GREEN light ON.
- Reports that Containment Spray has been stopped to CRS.

COMMENT:

SAT _____ UNSAT _____

Terminating cue: Containment Spray has been shutdown.

Stop Time: _____

VERIFICATION OF COMPLETION

Job Performance Measure No. _____

Examinee's Name:

Examiner's Name:

Date performed:

Facility Evaluator:

Number of attempts:

Time to complete:

Question Documentation:

Question:_____

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Response:_____

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Result: SAT or UNSAT

Examiner's signature and date: _____ _____

APPLICANT'S COPY

Initial Conditions:
RHR Loop A Containment Spray was manually initiated. Containment Spray is no longer needed. Shutdown Containment Spray.

Initiating Cue:
RHR Loop A Containment Spray was manually initiated. Containment Spray is no longer needed. Shutdown Containment Spray.

Facility: Clinton Task No: _____

Task Title: Defeat Fuel Building Ventilation Interlocks After High Radiation Isolation per CPS4410.00C011.

Job Performance Measure No: NEW K/A Reference: 288000A204

Applicability: RO__X___ SRO____

Examinee: _____ NRC Examiner: _____

Facility Evaluator: _____ Date: _____

Method of testing:

Simulated Performance _____ Actual Performance _____

Classroom _____ Simulator _____X_____ Plant _____

READ TO THE EXAMINEE

I will explain the initial conditions, which steps to simulate or discuss, and provide initiating cues. When you complete the task successfully, the objective for this job performance measure will be satisfied.

Initial Conditions:

The Fuel Building Ventilation system (VF) has isolated due to high radiation. EOP-8, Secondary Containment Control, was entered for high VF Exhaust radiation levels. The VF exhaust radiation is currently < 10Mr/hr.

Task Standard:

The VF interlocks have been defeated.

Required Materials:

Controlled procedures, tools, & equipment are located in the EOP Supply Cabinet (MCR).
EOP Tool Bag.

General References:

CPS 4410.00C011, DEFEATING VF INTERLOCKS.

Initiating Cue:

The Fuel Building Ventilation system (VF) has isolated due to high radiation. The VF exhaust radiation is currently < 10Mr/hr. You are instructed to defeat the VF Interlocks in preparation for restarting the VF system.

Time Critical Task: NO

Validation Time:

Simulator Set-up Conditions:

Start Time: _____

PERFORMANCE INFORMATION
NOTE
Steps 3.1 and 3.2 may be performed in any order.

WARNING
Live electrical contacts in panels.
Breaker contacts may be energized.

__*___ Performance step: (Denote critical steps with an asterisk)
Step 3.1, CPS 4410.00C011
At panel 1H13-P861, Bay C, remove relay 1UAY-VG508A (LN). (Third row up, second relay from the left)

STANDARD: Relay 1UAY-VG508A (LN) has been removed.

COMMENT:

SAT _____ UNSAT _____

__*___ Performance step: (Denote critical steps with an asterisk)
Step 3.2, CPS 4410.00C011
At panel 1H13-P851, Bay C, remove relay 1UAY-VG511A (MD). (Second row up, fourth relay from the left)

STANDARD: Relay 1UAY-VG511A (MD) has been removed.

COMMENT:

SAT _____ UNSAT _____

Terminating cue: Operator reports that the relay are removed per CPS 4410.00C011.

STOP Time _____

VERIFICATION OF COMPLETION

Job Performance Measure No. _____

Examinee's Name:

Examiner's Name:

Date performed:

Facility Evaluator:

Number of attempts:

Time to complete:

Question Documentation:

Question:_____

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Response:_____

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Result: SAT or UNSAT

Examiner's signature and date: _____ _____

APPLICANT'S COPY

Initial Conditions:
The Fuel Building Ventilation system (VF) has isolated due to high radiation. EOP-8, Secondary Containment Control, was entered for high VF Exhaust radiation levels. The VF exhaust radiation is currently < 10Mr/hr.

Initiating Cue:
The Fuel Building Ventilation system (VF) has isolated due to high radiation. The VF exhaust radiation is currently < 10Mr/hr. You are instructed to defeat the VF Interlocks in preparation for restarting the VF system.

JPM Worksheet B.2.a DC Load Shed During SBO

Facility: Clinton Task No: _____

Task Title: DC Load Shed During Station Blackout (SBO)

Job Performance Measure No: NEW K/A Reference: 263000A401

Applicability: RO__X__ SRO__X__

Examinee: _____ NRC Examiner: _____

Facility Evaluator: _____ Date: _____

Method of testing:

Simulated Performance _____X_____ Actual Performance _____

Classroom _____ Simulator _____ Plant __X___

READ TO THE EXAMINEE
I will explain the initial conditions, which steps to simulate or discuss, and provide initiating cues. When you complete the task successfully, the objective for this job performance measure will be satisfied.

Initial Conditions:
The station has experienced a loss of AC power (Station Blackout). The SBO is anticipated to last for several hours.

Task Standard:
DC loads have been shed per CPS 4200.01C002, DC Load Shed During SBO.

Required Materials: None

General References:
CPS 4200.01C002, DC Load Shed During SBO.
CPS 4200.01, Loss of AC Power.

Initiating Cue:
The operator is directed to shed DC loads in accordance with CPS 4200.01C002, DC Load Shed During SBO.

Time Critical Task: YES / NO

Validation Time:

Simulator Set-up Conditions: None

Start Time: _____

PERFORMANCE INFORMATION

__*___ Performance step: (Denote critical steps with an asterisk)

Step 1: At DC MCC 1A (1DC13E), AB 781' East, **OPEN** the following circuit breakers:

BATTERY 1A (DIV 1)

MCC/Cubicle	Ckt	Load Effected
1A-11A	7	Emerg Ltg Cab 164, 1LL64E [Emer/Exit lights in AB, FB, and SB]
1A-11A	13	DG 1A Control Pnl, 1PL12JA
1A-12A	18	Opt Isol Cab, 1PL56JA [Computer Points]
1A-12A	26	Term Cab, 1H13-P706A, DC Power to GETARS modules in NSPS
1A-12A	30	Term Cab, 1H13-P701A, Position for 1E12-R611A/12A
1A-12A	32	Term Cab, 1H13-P706B, RHR A Control Power [Disables 'A' Half of RHR]
1A-12A	33	Term Cab, 1H13-P706A, RPS A Control Power [Disables 'A' Half of RPS]
1A-12A	36	Control Pnl, 1G36-P002 [RWCU]

STANDARD: The Operator simulates opening the circuit breakers.

CUE: Inform the operator that the breakers are open.

COMMENT:

SAT _____ UNSAT _____

__*____ Performance step: (Denote critical steps with an asterisk)

Step 2: At DC MCC 1B (1DC14E), AB 781' West, **OPEN** the following circuit breakers:

BATTERY 1B (DIV 2)

MCC/Cubicle	Ckt	Load Effected
1B-4A	10	Emerg Ltg Cab 188, 1LL88E [Emer/Exit lights in MCR and CB]
1B-4A	14	DG 1B Control Pnl, 1PL12JB
1B-4A	15	Emerg Ltg Cab 165, 1LL65E [Emer/Exit lights in RW]
1B-4A	16	Emerg Ltg Cab 166, 1LL66E [Emer/Exit lights in CB]
1B-5A	17	6.9KV Swgr 1B, 1AP05EA, Cub. A, RR Pump 1B brk 3B Control Power
1B-5A	18	125VDC FP Pnl [Feeds Brk 7A] Power to FP Panels
1B-5A	20	Term Cab, 1H13-P742E, Various Annunciators [VC, VD, VH, VG, VP, VQ, VX, VY]
1B-5A	22	Opt Isol Cab, 1PL57JA, Various computer Points
1B-5A	24	Term Cab, 1H13-P742F, Various Annunciators [AP, CC, CM, CY/MC, DC, DO, FC, FP, HG, IA/SA, LD, MS, RE/RF, SF, SM, SX]
1B-5A	26	Term Cab, 1H13-P707E, DC power to GETARS interface modules in NSPS
1B-5A	30	Term Cab, 1H13-P702A, Position indicators 1E12-R611B/12B, R608A/B
1B-5A	32	Term Cab, 1H13-P707B, RHR B Control Power [Disables 'B' Half of RHR]

STANDARD: The Operator simulates opening the circuit breakers.

CUE: Inform the operator that the breakers are open.

COMMENT:

SAT _____ UNSAT _____

__*___ Performance step: (Denote critical steps with an asterisk)
Step 3: At NSPS Power Distribution Panel C (C71-P001C), CB 781' Div 3 Switchgear Room, open the following circuit breaker:

BATTERY 1C (DIV 3)

MCC/Cubicle	Ckt	Load Effected
1B-5A	32	Term Cab, 1H13-P707B, RHR B Control Power [Disables 'B' Half of RHR]

STANDARD: The Operator simulates opening the circuit breakers.

CUE: Inform the operator that the breakers are open.

COMMENT:

SAT _____ UNSAT _____

__*__ Performance step: (Denote critical steps with an asterisk)
Step 4: At DC MCC 1D (1DC15E), CB 781' Div 4 NSPS Inv Room, open the following circuit breaker:

BATTERY 1D (DIV 4)

MCC/Cubicle	Ckt	Load Effected
1D-3A	1	Emer Ltg Cab 163, 1LL63E [Emer/Exit lights in CNMT]

STANDARD: The Operator simulates opening the circuit breakers.

CUE: Inform the operator that the breakers are open.

COMMENTS:

\

SAT _____ UNSAT _____

Terminating cue: Inform the operator that the breakers have been opened.

Stop Time: _____

VERIFICATION OF COMPLETION

Job Performance Measure No. _____

Examinee's Name:

Examiner's Name:

Date performed:

Facility Evaluator:

Number of attempts:

Time to complete:

Question Documentation:

Question:_____

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_____

_____

Response:_____

_____

_____

_____

_____

Result: SAT or UNSAT

Examiner's signature and date: _____ _____

APPLICANT'S COPY

Initial Conditions:
The station has experienced a loss of AC power (Station Blackout). The SBO is anticipated to last for several hours.

Initiating Cue:
The operator is directed to shed DC loads in accordance with CPS 4200.01C002, DC Load Shed During SBO.

JPM Worksheet B.2.b MANUAL STARTUP OF ONE DIESEL FIRE PUMP

Facility: Clinton Task Nos: 041286C007 & 011286C510

Task Title: MANUAL STARTUP OF ONE DIESEL FIRE PUMP - Alternate Path

Job Performance Measure No: 041286J001 K/A Reference: 286000A208

Applicability: RO_ X____ SRO__X___

Examinee: _____ NRC Examiner: _____

Facility Evaluator: _____ Date: _____

Method of testing:

Simulated Performance ____X_____ Actual Performance _____

Classroom _____ Simulator _____ Plant __X___

READ TO THE EXAMINEE

I will explain the initial conditions, which steps to simulate or discuss, and provide initiating cues. When you complete the task successfully, the objective for this job performance measure will be satisfied.

EVALUATOR INSTRUCTIONS: Select the Fire Pump for this JPM to be conducted on. Amplifying cues are provided within the JPM steps.

Initial Conditions:

A fire exists in the plant; Both Diesel Driven Fire Pumps have failed to automatically start.

Task Standard:

Using CPS No. 3213.01, Attempt manual and Emergency startup of a diesel fire pump. Operate within the prescribed Precautions and Limitations when performing this evolution.

Required Materials: None

General References: CPS 3213.01, Fire Protection & Detection.

Initiating Cue:

As the E-Area operator, you are directed by the MCR to attempt to the local startup of the Diesel Driven Fire Pump "A" per step 8.1.1.2.2.7.

Inform operator that he should not actually touch any components while performing this task.

Time Critical Task: NO

Validation Time: ~ 10 minutes

Simulator Set-up Conditions: None

Start Time: _____

PERFORMANCE INFORMATION

_____ Performance step: (Denote critical steps with an asterisk)

Step 1: At Panel 1H13-P840, Verify the Control Switch is in AUTO and Depress the Start Pushbutton.

STANDARD: Verifies the Control Switch is in AUTO, and Simulates Depressing the Start Pushbutton.

CUE: Indicate that Start Pushbutton has been depressed, but the Diesel Driven Fire Pump "A" HAS NOT STARTED. (No cranking noise)

COMMENT:

SAT _____ UNSAT _____

_____ Performance step: (Denote critical steps with an asterisk)

Step 2: Place Diesel Driven Fire pump "A" local control switch in "Test" position.

STANDARD: Locates and simulates placing the correct switch into Test position

CUE: Indicate that the switch is in the Test position, but the Diesel Driven Fire Pump "A" HAS NOT STARTED. (No cranking noise)

COMMENT:

SAT _____ UNSAT _____

_____ Performance step: (Denote critical steps with an asterisk)

Step 3: Place Diesel Driven Fire pump "A" local control switch in "Manual 1" or "Manual 2" position, and depressing the manual start pushbutton until the Engine starts.

STANDARD: Locates and simulates placing the correct switch into "MANUAL 1" or "MANUAL 2" position; and depressing the MANUAL START pushbutton.

CUE: Indicate that the switch is in the "MANUAL 1" or "MANUAL 2" position, and the MANUAL START pushbutton has been depressed; but the Diesel Driven Fire Pump "A(B)" HAS NOT STARTED. (No cranking noise)

COMMENT:

SAT _____ UNSAT _____

_____ Performance step: (Denote critical steps with an asterisk)

Step 4: Place and Hold the Diesel Driven Fire pump "A" local MANTROL switch in "start" position until the Engine starts.

STANDARD: Locates and simulates placing the MANTROL switch into "START" position; and holding switch in Start.

CUE: Indicate that the MANTROL switch is in the "START" position, and being held there; but the Diesel Driven Fire Pump "A" HAS NOT STARTED. (No cranking noise).

COMMENT:
If the Applicant requests direction, the Examiner will act as the CRS and ask the Applicant for a recommendation. Note that Section 8.2.6, Emergency Start, CPS 3213.01, provides the operator with guidance for manually starting the Diesel Driven Fire Pump "A".

SAT _____ UNSAT _____

__*__ Performance step: (Denote critical steps with an asterisk)

Step 5: **OPEN THE FUEL SOLENOID BY TURNING THE MANUAL KNOB CLOCKWISE OR IN.**

STANDARD: Locates and simulates turning the FUEL SOLENOID knob clockwise or in.

CUE: Indicate that the manual knob for the fuel solenoid has been turned clockwise or in.

COMMENT:

SAT _____ UNSAT _____

__*__ Performance step: (Denote critical steps with an asterisk)

Step 6: **OPEN COOLING WATER PRESS REG BYPASS VALVE, DFP3A(B).**

STANDARD: Locates and simulates opening the correct valve.

CUE: Indicate that the valve has been opened.

COMMENTS:

SAT _____ UNSAT _____

__*__ Performance step: (Denote critical steps with an asterisk)

Step 7: **ENGAGE THE STARTER BY RAISING EITHER STARTING SOLENOID MANUAL OPERATOR. RELEASE THE MANUAL OPERATOR AS SOON AS THE ENGINE IS RUNNING.**

STANDARD: Locates and simulates raising a starting solenoid manual operator, then releases when engine is running.

CUE: Inform the examinee;

a. Immediately - engine cranking noise is heard.

b. (5 seconds later) The Diesel Driven Fire Pump "A" HAS STARTED and is running smoothly.

COMMENTS:

SAT _____ UNSAT _____

Terminating cue:

Acknowledge the Diesel Driven Fire Pump "A" is started and running smoothly.

Stop Time: _____

VERIFICATION OF COMPLETION

Job Performance Measure No. _____

Examinee's Name:

Examiner's Name:

Date performed:

Facility Evaluator:

Number of attempts:

Time to complete:

Question Documentation:

Question:_____
_____
_____
_____

Response:_____
_____
_____
_____
_____

Result: SAT or UNSAT

Examiner's signature and date: _____ _____

APPLICANT'S COPY

Initial Conditions:
A fire exists in the plant; Both Diesel Driven Fire Pumps have failed to automatically start.

Initiating Cue:
As the E-Area operator, you are directed by the MCR to attempt to the local startup of the Diesel Driven Fire Pump "A" per step 8.1.1.2.2.7.

Inform operator that he should not actually touch any components while performing this task.

JPM Worksheet B.2.c PLACE A-RHR IN SDC @ REMOTE SHUTDOWN PANEL

Facility: Clinton Task No: 011205C515

Task Title: PLACE RHR A IN SHUTDOWN COOLING AT THE REMOTE SHUTDOWN PANEL PER CPS NO. 4003.01

Job Performance Measure No: 015200J003 K/A Reference: 205000A409

Applicability: RO_X___ SRO_X___

Examinee: _____ NRC Examiner: _____

Facility Evaluator: _____ Date: _____

Method of testing:

Simulated Performance _____ Actual Performance __X_____

Classroom _____ Simulator ___X_____ Plant _____

READ TO THE EXAMINEE
I will explain the initial conditions, which steps to simulate or discuss, and provide initiating cues. When you complete the task successfully, the objective for this job performance measure will be satisfied.

Initial Conditions:
The Main Control Room has been evacuated. The Reactor was manually scrammed and the operating crew assembled at the Remote Shutdown Panel (RSP) to continue plant shutdown/cooldown.

RCIC was secured and RHR was secured following operation in the Suppression Pool Cooling Mode.

Steps G.4.1 and G.4.2 of CPS No. 4003.01, REMOTE SHUTDOWN, Appendix G have been completed.

Task Standard:
A-RHR Loop has been placed in Shutdown Cooling from the Remote Shutdown Panel.

Required Materials: None

General References:
CPS No. 4003.01, REMOTE SHUTDOWN, Appendices G (CPS 4003.01C008) and D (CPS 4003.01C005).

Initiating Cue:
Place A-RHR Loop in the Shutdown Cooling in order to progress towards cold shutdown conditions.

Time Critical Task: NO

Validation Time: ~ 25 minutes

Simulator Set-up Conditions:
- Initialize to any suitable IC with reactor pressure less than 104 psig.
- Position all Remote Transfer Switches to EMERGENCY.

Start Time: _____

PERFORMANCE INFORMATION

NOTE

Provided in Initial Conditions - Steps G.4.1 and G.4.2 of CPS No. 4003.01, REMOTE SHUTDOWN, Appendix G have been completed and the RHR pumps are secured (Step 4.3).

___*__ Performance step: (Denote critical steps with an asterisk)

Step 4.4, CPS 4003.01C008 (App. G)

SHUT or Verify Shut:

a) SHUT 1E12-F004A, RHR A SUPPRESSION POOL SUCTION VALVE. (Critical Step)

b) Verify Shut 1E12-F064A, RHR Pump A Min Flow Recirc Valve. (Not Critical)

c) Verify Shut 1E12-F024A, RHR A Test Valve To Suppression Pool. (Not Critical)

d) Verify Shut 1E12-F028A, RHR A To CNMT Spray A Shutoff Valve. (Not Critical)

e) Verify Shut 1E12-F042A, LPCI From RHR A Shutoff Valve. (Not Critical)

f) **SHUT (Local) 1E21-F085A, Wtr Leg Pump Supp to RHR A. (Normally locked open) (RHR A Pump Rm, V-120) (Critical Step)**

STANDARD:

a) Applicant turns switch to shut 1E12-F004A. Green light is ON. (Critical Step)

b) Verifies Green light ON for 1E12-F064A. (Not Critical)

c) Verifies Green light ON for 1E12-F024A. (Not Critical)

d) Verifies Green light ON for 1E12-F028A. (Not Critical)

e) Verifies Green light ON for 1E12-F042A. (Not Critical)

f) Applicant Directs that 1E12-F085A be shut locally. (Critical Step)

CUE: When directed to shut 1E12-F085A, report back as a NLO that 1E12-F085A is shut.

COMMENT:

SAT _____ UNSAT _____

___*___ Performance step: (Denote critical steps with an asterisk)
Step 4.5, CPS 4003.01C008 (App. G)

FOLLOWING SUB-STEPS 'A & B' MAY BE PERFORMED CONCURRENTLY AND IN ANY ORDER:

a) (Local) At AB MCC 1A3-6D (1AP74E), AB 781' East:
   1) Unlock and place 1E12-F008 breaker to ON.
   b) At 1E12-F008 breaker cubicle, place ALARM BYPASS SWITCH to NORMAL.

b) 1) Shut 1E12-F064A, RHR Pump A Min Flow Recirc Valve.
   2) (Local) At AB 781' East, AB MCC 1A2-10C (1AP73E), place 1E12-F064A breaker to OFF.

STANDARD:
a) 1) Applicant directs that breaker 1E12-F008 be unlocked and placed in ON.
a) 2) Applicant directs that the ALARM BYPASS SWITCH at 1E12-F008 breaker cubicle be placed to NORMAL.

b)1) Applicant turns switch to shut valve 1E12-F064A, Green Light is ON.
b)2) Directs that breaker 1E12-F064A be placed to OFF.

CUE: When directed to unlock and place breaker 1E12-F008 in ON, report back as NLO that breaker 1E12-F008 is unlocked and ON.

When directed to place the ALARM BYPASS SWITCH at 1E12-F008 breaker cubicle to NORMAL, report back as NLO that the ALARM BYPASS SWITCH has been placed in NORMAL.

When directed to place breaker 1E12-F064A in OFF, reports as NLO that breaker 1E12-F064A is OFF.

COMMENT:

SAT _____ UNSAT _____

__*__ Performance step: (Denote critical steps with an asterisk)
Step 4.6, CPS 4003.01C008 (App. G)
OPEN 1E12-F009, SHUTDOWN COOLING INBD SUCT ISOL VLV.

STANDARD: Applicant turns switch to open 1E12-F009. Red light ON.

COMMENT:

SAT _____ UNSAT _____

__*___Performance step: (Denote critical steps with an asterisk)
Step 4.7, CPS 4003.01C008 (App. G)
OPEN 1E12-F008, SHUTDOWN COOLING OUTBD SUCT ISOL VLV.

STANDARD: Applicant turns switch to open 1E12-F008. Red Light ON.

COMMENTS:

SAT _____ UNSAT _____

__*__ Performance step: (Denote critical steps with an asterisk)
Step 4.8, CPS 4003.01C008 (App. G)
OPEN 1E12-F006A, RHR A SHUTDOWN COOLING SUCT VALVE.

STANDARD: Applicant turns switch to open 1E12-F006A. Red Light ON.

COMMENTS:

SAT _____ UNSAT _____

____ Performance step: (Denote critical steps with an asterisk)
Step 4.9, CPS 4003.01C008 (App. G)
Shut 1SX082A, RHR Hx 1A Makeup Cond Inlet Valve per Appendix D (CPS 4003.01C005).

STANDARD: Applicant turns switch to shut 1SX082A. Green light ON.

COMMENTS:

SAT _____ UNSAT _____

_____ Performance step: (Denote critical steps with an asterisk)
Step 4.10, CPS 4003.01C008 (App. G)

IF SSW Strainer 1A Outlet Press, C61-R503 < 100 psig,
THEN Start Div 1 SX system per Appendix D, DIV 1 SX OPERATION.

STANDARD: Applicant verifies that SSW Strainer 1A Outlet Press, C61-R503 is > 100 psig.

COMMENTS:

SAT _____ UNSAT _____

__*__ Performance step: (Denote critical steps with an asterisk)
Step 4.11, CPS 4003.01C008 (App. G)
OPEN 1E12-F014A, SSW INLET RHR HX A VALVE

STANDARD: Applicant turns switch to open 1E12-F014A. Red light ON.

COMMENTS:

SAT _____ UNSAT _____

___*__Performance step: (Denote critical steps with an asterisk)
Step 4.12, CPS 4003.01C008 (App. G)
OPEN 1E12-F068A, RHR A HX SSW OUTLET VALVE.

STANDARD: Applicant turns switch to open 1E12-F068A. Red light ON.

COMMENTS:

SAT _____ UNSAT _____

____ Performance step: (Denote critical steps with an asterisk)
Step 4.13, CPS 4003.01C008 (App. G)
Verify 1SX173A, RHR A Hx SSW Bypass Valve shuts.

STANDARD: Applicant verifies1SX173A shuts. Green light ON

COMMENTS:

SAT _____ UNSAT _____

__*___Performance step: (Denote critical steps with an asterisk)
Step 4.14, CPS 4003.01C008 (App. G)
Shut 1E12-F003A**[T]**, RHR A Hx Outlet Valve.

STANDARD: Applicant turns switch to shut 1E12-F003A. Green light ON.

COMMENTS:

SAT _____ UNSAT _____

__*__ Performance step: (Denote critical steps with an asterisk)
Step 4.15, CPS 4003.01C008 (App. G)
Verify open 1E12-F048A**[T]**, RHR A Hx Bypass Vlv.

STANDARD: Applicant verifies 1E12-F048A is open. Red light ON.

COMMENTS:

SAT _____ UNSAT _____

__*__ Performance step: (Denote critical steps with an asterisk)

CAUTION

Do not permit SDC flow to lower < 1100 gpm due to 1E12-F064A min flow protection for the RHR A pump being defeated (breaker is open, and F064A does not auto cycle from the RSP). If SDC flow <1100 gpm, RHR Pump A must be secured.

Step 4.16, CPS 4003.01C008 (App. G)

START RHR PUMP A, 1E12-C002A, AND IMMEDIATELY OPEN 1E12-F053A[T], RHR A TO FEEDWATER S/D COOLING RTRN VLV.

STANDARD: Applicant turns switch to start A-RHR pump. Red light ON
Applicant turns switch to open 1E12-F053A[T] and establish a flow rate of >1100 gpm.

COMMENTS:

SAT _____ UNSAT_____

Terminating cue: RHR Loop A has been placed in Shutdown Cooling with 1E12-F003A is throttled open from the Remote Shutdown Panel.

Stop Time _____

VERIFICATION OF COMPLETION

Job Performance Measure No. _____

Examinee's Name:

Examiner's Name:

Date performed:

Facility Evaluator:

Number of attempts:

Time to complete:

Question Documentation:

Question:_____

_____

_____

_____

Response:_____

_____

_____

_____

_____

Result: SAT or UNSAT

Examiner's signature and date: _____ _____

APPLICANT'S COPY

Initial Conditions:
The Main Control Room has been evacuated. The Reactor was manually scrammed and the operating crew assembled at the Remote Shutdown Panel (RSP) to continue plant shutdown/cooldown.

RCIC was secured and RHR was secured following operation in the Suppression Pool Cooling Mode.

Steps G.4.1 and G.4.2 of CPS No. 4003.01, REMOTE SHUTDOWN, Appendix G have been completed.

Initiating Cue:
Place A-RHR Loop in the Shutdown Cooling in order to progress towards cold shutdown conditions. Establish a cooldown rate of < 100 deg. F/hour.

NRC SUBMITTED SCENARIOS

FOR CLINTON THE WEEK OF JUNE 12, 2000

Competencies	Applicant #1 RO/SRO-I/SRO-U			Applicant #2 RO/SRO-I/SRO-U			Applicant #3 RO/SRO-I/SRO-U		
	SCENARIO			SCENARIO			SCENARIO		
	1	2	3	1	2	3	1	2	3
Understand and Interpret Annunciators and Alarms	1,3,5 8,10,11	1,3,6 7,8	2,3, 6,7,8	2,4,5 6,9,12	2,4,8, 9,10,11	1,2,4, 7,9-11	ALL	ALL	ALL
Diagnose Events and Conditions	1,3,8, 10,11	1,3,7 8	2,3,6, 7,8	2,4,5 6,9,12	2,4,8, 9,10,11	1,2,4, 7,9-11	ALL	ALL	ALL
Understand Plant and System Response	1,3,7 8,10,11	1,3,6, 7,8	2,3,6, 7,8	2,4,5 6,9,12	2,4,8, 9,10,11	1,2,4, 7,9-11	ALL	ALL	ALL
Comply With and Use Procedures (1)	1,3,7 8,10,11	1,3,6, 7,8	2,3,6, 7,8	2,4,6 9,12	2,4,8, 9,10,11	1,2,4, 7,9-11	ALL	ALL	ALL
Operate Control Boards (2)	1,3,7 8,10,11	1,3,6, 7,8	2,3,6, 7,8	2,4,6 9,12	2,4,8, 9,10,11	1,2,4, 7,9-11	ALL	ALL	ALL
Communicate and Interact With the Crew	1,3,7	1,3,6, 7,8	2,3,6, 7,8	2,4,5, 6,9,12	2,4,8, 9,10,11	1,2,4, 7,9-11	ALL	ALL	ALL
Demonstrate Supervisory Ability (3)							ALL	ALL	ALL
Comply With and Use Tech. Specs. (3)							5,5	5,4	5

Notes:

(1) Includes Technical Specification compliance for an RO.
(2) Optional for an SRO-U.
(3) Only applicable to SROs.

Instructions:

Circle the applicant's license type and enter one or more event numbers that will allow the examiners to evaluate every applicable competency for every applicant.

Author: Jay Hopkins AnnMarie Stone

Chief Examiner: Scott R. McNeil

Facility: _Clinton_____ Scenario No.: __1 ___ Op-Test No.: 2000301

Examiners: _____ Operators: _____

Objectives: Exercise EOP-1A ATWS RPV Control. Goal is to have operators reduce power < 5% with level control. Evaluate applicants while: 1) reducing power with FCV to support the MSIV stroke test, 2) conducting MSIV stroke test, 3) responding to FWCS Master Level Controller fail low (~ 1 in/min), 4) responding to main turbine lube oil temperature controller failure causing high lube oil temperature, 5) responding to Offgas Post-Treatment radiation monitor failing high (isolates Offgas stack flow), 6) responding to loss of operating service air (SA) compressor & small instrument air (IA) leak, 7) reducing power due to IA leak, 8) responding to CRD Flow Control Valve (FCV) failing shut, 9) responding to one MSIV drifting off full open seat due to IA leak, 10) responding to rod drift alarm due to IA leak, 11) responding to ATWS (hydraulic lock), 12) SLC not inject.

Initial Conditions: 100% power for last 150 days. Div I DG and the MDRFP are out of service. Fuel shuffle in spent fuel pool.

Turnover: Unit is at 100%. Power was reduced for rod pattern adjustment last shift. Div I DG in out of service - maintenance is replacing a leaking relief valve on the air start system. It has been out of service for 1 day and is expected to be tested towards the end of this shift. The MDRFP is out of service - motor bearing replacement. Fuel shuffle in spent fuel pool. Plan to conduct MSIV stroke test CPS 9031.10. Operators are in place to support the surveillance.

Event No.	Malf No.	Event Type*	Event Description
1		RO-R	Reduce power to ~ 80% w/ FCV to support MSIV stroke test.
2		BOP-N	Conduct MSIV stroke test (CPS 9031.01)
3		RO-I	FWCS Master Level Controller Fail Low (~1 in/min). (Will work in manual.)
4		BOP-I	Main turbine lube oil temperature controller failure causing high lube oil temperature.
5		C SRO-TS	Offgas Post-Treatment radiation monitor (PR035) failing high (isolates Offgas stack flow)
6		BOP-C	Loss of operating SA compressor & small IA leak.
7			Reducing power due to IA leak.
8		RO-C	CRD Auto Flow Control Valve (FCV) (FO02A) failing shut.
9			One MSIV drifting off full open seat due to IA leak.
10			One rod drift alarm due to IA leak.
11		M	ATWS - hydraulic lock.
12		C	SLC not inject.

* (N)ormal, (R)eactivity, (I)nstrument, (C)omponent, (M)ajor

Event No.: _1_ (Reactivity) Power Reduction to < 80% with FCV in preparation for MSIV Stroke Test

Time	Position	Applicant's Actions or Behavior
	SRO	• CREW BRIEF ON REACTIVITY MANAGEMENT COMPLETED PRIOR TO CREW TAKING SHIFT. POWER DECREASE IAW CPS 3005.01, UNIT POWER CHANGES. • DIRECT RO TO REDUCE POWER BY LOWERING FLOW W/ FCV TO < 80%. • NOTIFY CHEMISTRY OF POTENTIAL POWER CHANGE > 15%. • NOTE: ~950MWe = 100% = 2894MWth. • Notify Load Dispatcher of load drop.
	RO	REDUCE REACTOR POWER BY ADJUSTING RR FLOW VIA FCV OPERATION.
	BOP	MONITOR PLANT AS DIRECTED BY SRO.

Event No.: _2_ (Normal Evolution) CONDUCT MSIV STROKE TEST: NOTE - 1st inboard MSIV test will be completed without any problems.

Time	Position	Applicant's Actions or Behavior
	SRO	Implement CPS 9031.01, Main Steam Line Isolation Valve Channel Functional AND DIRECT OPERATOR ACTIONS.
	BOP	VERIFY TEST PREREQUISITE CONDITIONS OBTAIN SHIFT SUP PERMISSION TO PERFORM TEST MSL A/B/C/D BYPASS SWITCH IN NORMAL ON 1H13-P601 NS4 A/B/C/D BYPASS SWITCH IN NORMAL ON 1H13-P661-664 NOTIFY STA OF GETARS TRIPS OF CHAN 147-154 PLACE MSL A INBD MSIV CONTROL SWITCH TO THE CLOSE POSITION. DEPRESS AND HOLD TEST PUSHBUTTON, MSL A INBD MSIV TEST. VERIFY BOTH RED AND GREEN LIGHTS ARE ON. ALARM DIV 1 OR 4 MSIV CL TRIP ANNUNCIATES. COMPUTER POINT B21-NC047 INDICATES TRIPPED (or Logic 1 State) AFTER ALARM IS RECEIVED RELEASE THE TEST PUSHBUTTON AND VERIFY RED LIGHT ON GREEN LIGHT OFF ALARM DIV 1 OR 4 MSIV CL TRIP CLEARS. COMPUTER POINT B21-NC047 INDICATES RESET (or Logic 0 State) PLACE THE MSL A INBD MSIV CONTROL SWITCH FOR MSIV 1B21-FO22A TO AUTO. PERFORM INDEPENDENT VERIFICATION OF SWITCH POSITION BEFORE BEGINNING "B" INBOARD MSIV. NOTE: THE STEPS FOR THE "B" INBOARD MSIV ARE THE SAME.
	RO	MONITOR PLANT PARAMETERS AS DIRECTED BY SRO.
	CUE	When 2nd MSIV is being tested AND when directed by Chief Examiner, insert Event 3, FWCS MASTER LEVEL CONTROLLER (AUTO) LOW Failure (~ 1 INCH/MINUTE RAMP).

Event No.: _3_ (RO-I) FWCS MASTER LEVEL CONTROLLER SLOW FAILURE LOW (~ 1 in/min ramp). MANUAL CONTROL WILL WORK. When 2nd inboard MSIV is being tested, then event 3 will be inserted

Time	Position	Applicant's Actions or Behavior
	CUE	FAIL FWCS MASTER LEVEL CONTROLLER (AUTO) LOW (~ 1 INCH/MINUTE RAMP) WHEN 2ND MSIV IS BEING TESTED.
	RO	Report RPV Level is slowly decreasing. RPV Low Level Alarm @ 30.8 " (Alarm window 5002-2Q) Take manual control of TDRFPs and restore level to ~ 36 inches IAW CPS 3103.01, Feedwater, Section 8.3.13, High/Low RPV Level.
	SRO	Directs BOP to stop MSIV testing. Directs RO to take manual control of TDRFPs and restore level to ~ 36 inches IAW CPS 3103.01, Feedwater, Section 8.3.13, High/Low RPV Level. Directs RO/BOP to review Annunciator Response Procedure for RPV Low Level Alarm @ 30.8 " (Alarm window 5002-2Q) Contacts Maintenance to prepare work order to troubleshoot.
	BOP	Monitor plant parameters as directed by SRO.
	CUE	After RPV level stabilized AND when directed by Chief Examiner, insert Event 4 - Main turbine LO hi temp.

Event No.: _4_ (BOP-I) MAIN TURBINE LUBE OIL TEMP CONTROLLER FAILURE: Control (in auto) fails causing high LO temperature. Manual Control will work.

Time	Position	Applicant's Actions or Behavior
	CUE	After RPV level stabilized AND when directed by Chief Examiner, insert Event 4 - turbine LO hi temp.
	BOP	Reports: High Turbine LO Temperature Alarm (normal is ~110 F) Determines Turbine LO Temperature Controller is not functioning in automatic. When directed, takes manual control and restores temperature to normal band.
	SRO	Directs BOP to determine cause of high temperature. Directs local area operator to investigate. Directs BOP to take manual control and restore temperature to normal band. Contacts Maintenance to prepare work order to troubleshoot.
	RO	Monitor plant parameters as directed by SRO.
	CUE	After temperature has stabilized AND when directed by Chief Examiner, insert Event 5 - Offgas Post-Treatment Rad Monitor fails high.

Event No.: _5_ (SRO-TS & C) Offgas Post-Treatment Rad Monitor (PR035) Fails High. Offgas vent stack valve (N66FO60) will close.

Time	Position	Applicant's Actions or Behavior
	CUE	After temperature has stabilized AND when directed by Chief Examiner, insert Event 5 - Offgas Post-Treatment Rad Monitor (PR035) fails high. Offgas vent stack valve (N66FO60) auto closes. NOTE - If FO60 remains closed of an extended period of time, main condenser vacuum will begin to decrease.
	BOP/RO	Report alarms: Window 5130-6D, Normal Offgas Flow Low Range Low (due to FO60 closed) Report that FO60 has shut. Report Process Rad Monitor PR035 reads off scale high and PR041 reads normal value for plant conditions. Bypass rad monitor and reopen Offgas vent stack valve, FO60, when directed.
	SRO	Refer to Offsite Dose Calculation Manual (OCDM) 3.9, Radioactive Gaseous Monitoring Instrumentation. Place the rad monitor in bypass and reopen the Offgas vent stack valve, FO60. Contact RP/Maintenance to troubleshoot.
	CUE	After FO60 has been reopened & SRO has made a determination on Offgas, AND when directed by Chief Examiner, insert Event 6, Loss of one service air compressor w/ SMALL leak in Instrument Air.

Event No.: _6_ (BOP-C) Loss of one service air (SA) compressor and STANDBY SA compressor will not auto start. It will start manually. Concurrent SMALL IA Leak.

Time	Position	Applicant's Actions or Behavior
	CUE	After FO60 has been reopened & SRO has made a determination on Offgas, AND when directed by Chief Examiner, insert Event 6, Loss of one Service Air compressor w/ SMALL IA leak. (SA Compressor tripped on high vibs.) **DO NOT LET SA/IA HEADER PRESSURE DROP BELOW 70 PSIG.**
	BOP	Report Alarm Window 5041-1A, Auto Trip Pump/Motor (due to SA compressor trip) Report Alarm Windows (5041-5B to -5E) for low SA Header Pressure (RadWaste Bldg, Control Bldg, Aux/Fuel Bldg, Turbine Bldg) Monitor SA and IA header pressures. Standby SA Compressor should auto start at SA header pressure of 80 psig decreasing. THE STANDBY COMPRESSOR WILL **NOT** AUTO START. When Directed, start Standby SA Compressor. Monitor SA and IA header pressures. After compressor startup, report IA header pressure slowly decreasing.
	SRO	Refer to ARP 5041-1A and possibly to CPS 4004.01, Instrument Air Losses. Direct BOP to start standby SA compressor and monitor SA &IA header pressures. If IA header pressure lowers to 60 psig & can not be restored, Mode Switch to Shutdown. Direct RO to monitor SDV rod block OR control rods begin to drift. If RO identifies these indications, Mode Switch to Shutdown. Direct Maintenance to initiate work order and troubleshoot/repair. Direct local area operators to check SA/IA headers for leaks.
	RO	Monitor SDV rod block OR control rods begin to drift. Monitor other plant parameters as directed by SRO.
	CREW	Local Area operator reports small non-isolable IA header leak.

Event No.: _7_ Power Reduction w/ FCV to Due to IA Small Header Leak		
Time	Position	Applicant's Actions or Behavior
	CUE	**DO NOT LET SA/IA HEADER PRESSURE DROP BELOW 70 PSIG.**
	SRO	Direct controlled plant shut down IAW CPS 3006.01, Unit Shutdown. Direct BOP to start standby SA compressor and monitor SA &IA header pressures. If IA header pressure lowers to 60 psig & can not be restored, Mode Switch to Shutdown. Direct RO to monitor SDV rod block OR control rods begin to drift. If RO identifies these indications, Mode Switch to Shutdown. NOTE- All SA ring headers & IA ring header in RadWaste & Control Bldg will auto isolate @ 70 psig. This should not cause a scram. Notify Chemistry of power change > 15% & Load Dispatch of unit going offline. Direct BOP to maintain RPV level control & coordinate w/ RO to maintain level.
	RO	Reduce reactor power by adjusting recirc flow via FCV operation. Coordinate w/ BOP to maintain RPV level in program band.
	BOP	Control RPV level in manual & Coordinate w/ RO to maintain RPV level in program band.
	CUE	After flow has been reduced using one FCV AND when directed by Chief Examiner, insert Event 8, CRD Auto Flow control valve fails shut. **DO NOT LET SA/IA HEADER PRESSURE DROP BELOW 70 PSIG.**

Event No.: _8_ (RO-C) CRD Auto Flow Control Valve (FO02A) Fails Shut in Auto. (Will work in manual control)

Time	Position	Applicant's Actions or Behavior
	CUE	After flow has been reduced using one FCV AND when directed by Chief Examiner, insert Event 8, CRD Flow control valve fails shut. **DO NOT LET SA/IA HEADER PRESSURE DROP BELOW 70 PSIG.**
	RO	Stops power reduction. Reports CRD FCV failed shut. When directed, places CRD FCV in manual and restores CRD system pressure to normal (~ 250 psid above Rx pressure)
	SRO	Directs power reduction to stop. Refer to CPS 3304.01, CRD Hydraulic System. Directs RO to place CRD FCV in manual and restores CRD system pressure to normal. After CRD system parameters back to normal, continue with power reduction.
	BOP	Maintain RPV level & monitor plant systems as directed.
	CUE	After CRD pressure back to normal AND when directed by Chief examiner, insert Event 9 - 1A Inboard MSIV drifting off open seat (due to IA leak). **DO NOT LET SA/IA HEADER PRESSURE DROP BELOW 70 PSIG.**

Event No.: _9_ (C) 1A Inboard MSIV drifting off open seat (due to IA leak).		
Time	Position	Applicant's Actions or Behavior
	CUE	After CRD pressure back to normal AND when directed by Chief examiner, insert Event 9 - 1A Inboard MSIV drifting off open seat (due to IA leak).**DO NOT LET SA/IA HEADER PRESSURE DROP BELOW 70 PSIG.**
	RO/ BOP	Report 1A Inboard MSIV not full open. Verify other MSIVs full open. Verify other equipment effected by SA/IA is operating normally. When directed, place control switch for 1A Inboard MSIV to OFF.
	SRO	Refer to CPS 4004.01, Instrument Air Losses, step 4.2 (IF MSIVs close due to loss of IA, THEN place control switch in OFF). Direct RO/BOP to verify other equipment effected by SA/IA is operating normally. (i.e. control rods, scram valves, ADS, Offgas Vent discharge valve, etc..) NOTE: SRO may direct rapid shutdown (i.e. Mode Switch to Shutdown)
	CUE	After control switch for 1A Inboard MSIV is OFF AND when directed by Chief examiner, insert Event 10, two rods drift (due to IA leak); Event 11, ATWS hydraulic lock; and Event 12, SLC not inject. **DO NOT LET SA/IA HEADER PRESSURE DROP BELOW 70 PSIG.**

Events: 10, 11, & 12 (C, M, C) Event 10, two rods drift (due to IA leak);
Event 11, ATWS hydraulic lock; and Event 12, SLC not inject.

Time	Position	Applicant's Actions or Behavior
	CUE	After control switch for 1A Inboard MSIV is OFF AND when directed by Chief examiner, insert Event 10, two rods drift (due to IA leak); Event 11, ATWS hydraulic lock; and Event 12, SLC not inject. **DO NOT LET SA/IA HEADER PRESSURE DROP BELOW 70 PSIG.**
	RO	Report rod drift alarms. (Rod Drift Annunciator Window 5006-4G)
	SRO	Refer to CPS 4007.02, Inadvertent Rod Movement. Refer to CPS 4004.01, Instrument Air Losses. Direct RO to scram the Rx (Mode Switch to Shutdown) due to rod drift w/ IA Leak.
*	RO	When directed, places Mode Switch in Shutdown. Reports rods did not insert & Shutdown Criteria not met. Shutdown Criteria: All rods are in to at least 02; OR no more than one rod out past 02, with all other rods in at 00; OR a qualified Rx Eng has determined the Rx will remain shutdown under all conditions without boron. When directed, Insert Manual scram (it won't work). When directed, Initiate ARI (it won't work).
	SRO	Enter EOP-1 (RPV Control) & transitions to EOP-1A (ATWS RV Control) Direct RO to insert manual scram & ARI. Obtain RPV & Containment parameters from RO/BOP. Direct RO/BOP to maintain RPV level in manual. (May get RCIC & HPCS startup on Level 2 (-45"). RPV Pressure control w/ BPVs & auto SRVs.
	BOP	Monitor plant parameters as directed by SRO. Maintain RPV level in manual.

* critical task

Events:11 & 12 (Continued) Event 11, ATWS hydraulic lock; and Event 12, SLC not inject.

Time	Position	Applicant's Actions or Behavior
* critical task *	SRO	Direct RO/BOP to initiate SLC. (It will not work) Direct RO to manually insert rods (It will work), IAW CPS 4411.08, ALTERNATE CONTROL ROD INSERTION. Direct RO/BOP to maintain RPV level in manual. (May get RCIC & HPCS startup on Level 2 (-45").
	RO	When directed, manually insert rods IAW CPS 4411.08. Report rods are being inserted.
	RO/ BOP	When directed, initiate SLC. Report SLC pumps running, continuity lights ON, no injection (SLC discharge pressure much > RCS, power not decreasing, and tank level not decreasing). Maintain RPV level in manual. (May get RCIC & HPCS startup Level 2.)

Events:11 & 12 (Continued) Event 11, ATWS hydraulic lock; and Event 12, SLC not inject.

Time	Position	Applicant's Actions or Behavior
	CUE	When power < 5% due to RPV level drop, restore scram function and insert all rods.
* critical task *	SRO	EOP-1A Level: Reduce level to reduce power to < 5%. Terminate & prevent injection (except CRD & SLC) Reduce level & maintain level Band C [-162" (TAF) to XX?? (level at beginning of step)] Let level drop until: Power < 5% OR Level @ -130" OR All SRVs closed AND D/W press stays below 1.68 psig.
	RO	Continues to drive rods. Reports when all rods are inserted.
	CUE	End Scenario - All rods inserted, RPV level and pressure are stable, AND when directed by Chief examiner.

Extra Comment Page (if needed)

Time	Position	Applicant's Actions or Behavior

Facility: __Clinton_____ Scenario No.: __2__ Op-Test No.: 2000301

Examiners: _____ Operators: _____

Objectives: Exercise EOP - 3, "Emergency Depressurization," due to loss of high pressure injection and high temperatures in suppression pool (two stuck open SRVs). Evaluate applicants while: 1) shifting recirc pumps to fast, 2) conducting HPCS surveillance, 3) responding to FWLCS setpoint setdown logic failure, 4) responding to HPCS pump discharge flow instrument for mini flow valve failure, 5) responding to LPCS/RHR-A water leg pump leak, 6) reducing power due TS shutdown, 7) responding to recirc FCV "A" drift open, 8) responding to MISV rapid closure & scram, 9) responding to three SRVs not auto close (two will not close), 10) responding to RCIC overspeed trip during auto (or manual) start (not reset), and 11) responding to ADS Logic Failure (valves will open manually).

Initial Conditions: ~35% power. Power was reduced to repair main condenser circulating water tube leakage. Div I DG OOS - maintenance is replacing a leaking relief valve on the air start system. It has been out of service for 1 day and is expected to be tested towards the end of this shift. The MDRFP is out of service - motor bearing replacement. Fuel shuffle in spent fuel pool.

Turnover: Unit is at ~ 35%. Continue power increase & shift recirc. pumps to fast. Step 8.4.3, CPS 3004.01 completed. After pump shift and plant is stable, conduct HPCS surveillance (tank to tank) CPS 2801.00D002. Operators are in place to support surveillance. Engineering identified a potential problem with HPCS flow data during last surveillance and wants to re-verify the data. Div I DG out of service - maintenance is replacing a leaking relief valve on the air start system. Div I DG has been OOS for 1 day and is expected to be tested near the end of this shift. The MDRFP is OOS - motor bearing replacement. Fuel shuffle in spent fuel pool. Planned activity is HPCS surveillance.

Event No.	Malf. No.	Event Type*	Event Description
1		RO-R	Shift recirculation pumps to fast.
2		BOP-N	HPCS surveillance (tank to tank) CPS 2801.00D002
3		RO-I	FWLCS setpoint setdown logic fails, causing it to actuate.
4		BOP-I	HPCS pump discharge flow instrument for mini flow valve (FO12) fails low. Valve opens when pump is operating.
5		C SRO-TS	LPCS/RHR-A water leg pump failure (low discharge pressure due to leak).
6			Reducing power due to TS shutdown.
7		RO-C	Rx recirculation "A" flow control valve (FCV) drift open.
8		C	MSIV rapid closure - reactor scram.
9		BOP-C & M	Three SRVs not auto close. (Two will not close)
10		C	RCIC overspeed trip during auto (or manual) start (not reset).
11		C	ADS Logic Failure (valves will open manually)

* (N)ormal, (R)eactivity, (I)nstrument, (C)omponent, (M)ajor

Event No.: 1 (RO - Reactivity Change) Shift Recirculation Pumps to Fast Speed.		
Time	Position	Applicant's Actions or Behavior
	SRO	Conduct crew brief. The Reactivity Management brief was completed prior to the crew taking the shift. Transfer pumps to fast IAW CPS 3302.01, Reactor Recirculation, step 8.1.2. Verify Flow Control Line ≥ 60%. Direct local operators to bypass the FW Flow FCV cavitation / RR pump downshift interlock for each pump. Direct RO/BOP to Reset/Verify Reset FCV & pump interlocks. Direct FCV to be positioned at minimum position for pump being shifted to fast. Direct the other FCV be adjusted to maintain Rx power constant and Feedwater flow ≥ 3.13 mlbm/hr (~ 29.4 % RTP). Make notifications: RP of potential change in rad levels, Security the perimeter lighting may be effected, plant wide Gaitronics announcement. Direct RO to transfer pumps to fast speed (one at a time).
	RO	Verify Flow Control Line ≥ 60% using computer. Verify Annunciator 5003-4C/4J, RECIRC MTR A (B) AUTO TRIP OR XFER TO LS window has alarmed when interlock has been bypassed. When directed, Reset/Verify Reset RCV & pump interlocks. When directed, position the RCV at minimum for pump being shifted to fast. When directed, adjusted the other FCV to maintain Rx power constant and Feedwater flow ≥ 3.13 mlbm/hr (~ 29.4 % RTP). When directed, shift pumps to fast speed (one at a time).
	BOP	Monitor plant parameters as directed by SRO. When directed, adjusted the other FCV to maintain Rx power constant and Feedwater flow ≥ 3.13 mlbm/hr (~ 29.4 % RTP). When directed, monitor pump seal key parameters.

Event No: 1 (RO-Reactivity Change) Shift Recirculation Pumps to Fast Speed. **(CONTINUED)**		
Time	Position	Applicant's Actions or Behavior
	SRO	After pumps shifted to fast, direct STA to remove the substitute value from and restore points B33NA003 and/or 004, RR Pump A (B) Motor Power for the RR pump transfer to fast speed. Direct increase in power w/ FCV to between 35 & 39% to clear the cavitation interlocks. Direct RO/BOP to verify cavitation interlocks are cleared.
	RO	When directed, increase in power w/ FCV to between 35 & 39% to clear the cavitation interlocks. When directed, verify cavitation interlocks are cleared.
	BOP	Monitor plant parameters as directed by SRO.

Event No.: 2 - (Normal Evolution) HPCS Surveillance (Tank to Tank)		
Time	Position	Applicant's Actions or Behavior
	SRO	When plant stable (@ < 40 % power), conduct HPCS surveillance (RCIC Tank to RCIC Tank) IAW CPS 2801.00D002. Operators are standing by to support the surveillance. Direct BOP to verify valve lineups and start HPCS pump. Direct BOP to verify proper HPCS startup.
	BOP	When directed: Verify valve lineups including: • HPCS MOV TEST PREP Switch to TEST. • HPCS test return line to RCIC tank full. (Cycle FW-10 & -11) Start HPCS pump. Verify minimum flow valve (FO-12) opens. • FO-12 auto opens when discharge pressure is > 145 # AND discharge flow is < 625 gpm. Simultaneously throttle open FO-10 & -11 until flow is 4900 gpm. Verify minimum flow valve (FO-12) closes. • FO-12 auto closes when pressure is < 145 # OR flow is > 625 gpm. Verify HPCS Pump Room Fans are operating.
	RO	Monitor plant parameters as directed by SRO.
	CUE	After HPCS mini-flow valve is verified closed and HPCS is about 4900 gpm AND when directed by Chief examiner, enter EVENT 3 (FWLCS setpoint setdown logic failure).

Event No.: 3 (RO - I) FWLCS Setpoint Setdown Logic Failure (causing it to actuate).
(The setpoint initially increases to 40" to 10 sec. and then lowers to 18")

Time	Position	Applicant's Actions or Behavior
	CUE	After HPCS mini-flow valve is verified closed and HPCS is about 4900 gpm AND when directed by Chief examiner, enter EVENT 3
	RO	Report RPV level transient. RPV High Level Alarm ~ 38.8" & Low Level Alarm ~ 30.8." When directed, take manual control of A-TDRFP and restore level to ~ 35." When directed, reset setpoint setdown signal. When directed, return RPV level control to automatic.
	SRO	Direct RO/BOP to determine cause of RPV level transient. Direct RO to take manual control of A-TDRFP and restore level to ~ 35." After SRO determines that the signal was invalid, direct RO to reset setpoint setdown signal. Direct RO to return RPV level control to automatic.
	BOP	Monitor plant parameters as directed by SRO.
	CUE	After RPV level is stable and in automatic AND when directed by the Chief examiner, enter Event 4 (HPCS pump discharge flow instrument for minimum flow valve (FO-12) fails low and FO-12 will auto open and will not remain closed.).

Event No. 4 - (BOP - I) HPCS pump discharge flow instrument for minimum flow valve (FO-12) fails low and FO-12 will auto open and will not remain closed.		
Time	Position	Applicant's Actions or Behavior
	CUE	After RPV level is stable and in automatic AND when directed by the Chief examiner, enter Event 4.
	BOP	Report HPCS minimum flow control valve (FO-12) is open w/ HPCS pump operating. When directed, close FO-12. (The valve will re-open.) When directed, secure HPCS.
	SRO	Determine that FO-12 will not remain closed due to HPCS pump discharge flow instrument for minimum flow valve failing low. Refer to TS 3.5.1.B and determine HPCS is inoperable (14 day LCO) Verify by administrative means that RCIC is operable w/in 1 hour. Direct BOP to secure HPCS. Contact Maintenance to initiate a work order and troubleshoot and/or repair.
	RO	Monitor plant parameters as directed by SRO.
	CUE	After SRO determines HPCS is inoperable and actions are being taken to secure HPCS AND when directed by the Chief examiner, enter Event 5 (LPCS/RHR-A water leg pump failure).

Event Nos.: 5 & 6 Event 5: (SRO - TS) (LPCS/RHR-A Water Leg Pump Failure (Low discharge pressure due to leak). Event 6: Reduce power due to TS required shutdown.

Time	Position	Applicant's Actions or Behavior
	CUE	After SRO determines HPCS is inoperable and actions are being taken to secure HPCS AND when directed by the Chief examiner, enter Event 5.
	BOP	Report Annunciator 5063-3G, LPCS PUMP DISCHARGE PRESS ABNORMAL. Low pressure alarm @ ~ 35 psig. Report LPCS/RHR-A water leg pump running. When directed, secure LPCS/RHR-A water leg pump.
	SRO	Refer to ARP 5063-3G, LPCS PUMP DISCHARGE PRESS ABNORMAL. Direct RO/BOP to determine possible causes. Dispatch local area operator to investigate.
	CUE	LOCAL OPERATOR WILL REPORT WATER SPRAYING FROM PUMP CASING. Direct RO/BOP to secure LPCS/RHR-A water leg pump. Refer to TS 3.5.1.H (HPCS & LPCS inoperable which is TS 3.0.3) (Also recall that Div I DG is inoperable.) Make preparations for plant shutdown IAW CPS 3006.01, Unit Shutdown. (The first actions will be to verify rod pattern and then downshift pumps to slow.)
	RO	Monitor plant parameters as directed by SRO.
	CUE	After SRO reports that plant is in TS 3.0.3 and has made decision to conduct a controlled shutdown AND when directed by the Chief examiner, enter Event 7 (Rx Recirculation A-FCV Drifts Open)

Event No.: 7 (RO - C) Rx Recirculation A-FCV Drifts Open		
Time	Position	Applicant's Actions or Behavior
	CUE	After SRO reports that plant is in TS 3.0.3 and has made decision to conduct a controlled shutdown AND when directed by the Chief examiner, enter Event 7.
	RO	Report increase in Rx power, recirculation flow, and generator load w/o operator action. When directed, lock up the A-FCV. Verify the plant is operating w/in the Stability Control & Power/Flow Map limits. Identify Recirc loop mismatch.
	SRO	Refer to CPS 4008.01, Abnormal Coolant Flow. Direct RO to lock up the A-FCV to stop FCV motion. Verify the plant is operating w/in the Stability Control & Power/Flow Map limits. Refer to TS 3.4.1 for recirculation loop flow mismatch ($\leq$ 10% mismatch w/ power < 70% thermal).
	BOP	Monitor plant parameters as directed by SRO.
	CUE	When recirc FCV has been locked up AND when directed by the Chief examiner, insert Events 8 & 9 (Event 8 - MSIV rapid closure & subsequent Rx scram. Event 9 - Three SRVs open at scram and will not auto close, one will close manually).

Event Nos. 8 ,9, 10, & 11.
Event 8 - MSIV rapid closure & subsequent Rx scram.
Event 9 - (BOP-C & Major) Three SRVs open at scram and will not auto close, one will close manually. The remaining two are mechanically stuck open.
Event 10 - RCIC will trip on overspeed during auto (or manual start) & will not reset.
Event 11 - ADS Logic Failure (valves will open manually)

Time	Position	Applicant's Actions or Behavior
	CUE	When recirc FCV has been locked up AND when directed by the Chief examiner, insert Events 8 & 9.
* critical task *	SRO	Enter EOP-1 for Rx scram. Direct BOP to close open SRVs. Direct RO to continue w/ CPS 4100.01, Rx Scram. Direct BOP to reset RCIC and restart RCIC.
	BOP	Report 3 SRVs open (FO51 C, D, & F). When directed, close open SRVs. Report that only FO51D will closed. Report RCIC trip on startup (auto or manual). Report RCIC will not reset. Monitor plant parameters and operate equipment as directed by SRO.
	RO	Take Mode switch to Shutdown and verify shutdown criteria: All rods are in to at least 02; OR no more than one rod out past 02, with all other rods in at 00; OR a qualified Rx Eng has determined the Rx will remain shutdown under all conditions without boron. When directed, perform actions in CPS 4100.01, Rx Scram. Monitor plant parameters and operate equipment as directed by SRO.

Event Nos. 8 ,9, 10, & 11. **CONTINUED**

Time	Position	Applicant's Actions or Behavior
	SRO	Enter EOP - 6, Primary Containment Control when parameters exceed entry conditions. • DW/Containment Pressure > 1.68 psig • DW Temperature > 150 deg. F • Containment Temperature > 122 deg. F • Suppression Pool Level > 19 ft., 5 in. OR < 18 ft., 11 in. • Suppression Pool Temperature > 95 deg. F Direct RO/BOP to initiate/maximize Suppression pool cooling. Direct RO/BOP to initiate/maximize containment/drywell cooling
	RO BOP	When directed, initiate/maximize Suppression pool cooling. When directed, initiate/maximize containment/drywell cooling.

Event Nos. 8 ,9, 10, & 11. **CONTINUED**

Time	Position	Applicant's Actions or Behavior
* critical task	SRO	Direct Emergency Depressurization (EOP-3) when level can not be held above TAF (-162") OR when Suppression Pool Temperature can not be held below Heat Capacity Limit. Direct RO/BOP to initiate ADS (it will not initiate). Direct RO/BOP to manually open SRVs to depressurize the RPV. Depressurize until < Shutdown Cooling Interlock pressure (104 psig) OR until RPV level > TAF.
	RO BOP	When directed, initiate ADS (it will not initiate). Report that ADS did not initiate. When directed, manually open SRVs to depressurize the RPV.
	CUE	End Scenario - RPV depressurized and level maintained above TAF, suppression pool cooling maximized, DW/Containment cooling maximized, AND when directed by the Chief Examiner.

Extra Comment Page (if needed)

Time	Position	Applicant's Actions or Behavior

Facility: CLINTON POWER STATION Scenario No.: 03 Op-Test No.: 2000301

Examiners: _____ Operators: _____

Objectives: Evaluate applicants while: 1) performing an EDG monthly run surveillance, 2) responding to a slow loss of condenser vacuum, 3) responding to an RPV level instrument failure, 4) responding to an upscale failure of the control room HVAC rad monitor 5) responding to a loss of both trains of RPS, 6) performing a reduction in reactor power, 7) responding to a trip of one of the running TDRFPs, 8) responding to a feedwater line break inside containment, 9) responding to a failure of NSSS to isolate the main feedwater lines, 10) responding to a failure of the SLC system to automatically initiate, and 11) responding to a reduced HPCS flow (100 gpm)

Initial Conditions: 100% power, NOP, NOT, EOC (150 days of continuous operation)

Turnover: Unit is at 100% power. Div I DG has been returned to service after replacing a leaking relief valve on the air start system. It was out of service for 2 days and is being post maintenance tested during this shift. (monthly run surveillance) The MDRFP is OOS - motor bearing replacement. RM009A is OOS. HP & C&I are investigating spurious readings. Operators are shuffling fuel in the spent fuel pool. Shift instruction - A half-scram has occurred on channel A12 hours ago. I&C has been investigating the cause of the half-scram. When I&C determines the cause, they will put together a work package to fix the system. Complete the EDG run test, maintain the plant per load dispatcher directions.

Event No.	Malf. No.	Event Type*	Event Description
1		N	Monthly run surveillance on the Div I EDG
2	MC01	C	Loss of main condenser vacuum (7% over 50 min)
3	C34N004B	I	RPV level instrument fails high (43%)
4		I	Control Room HVAC rad monitor fails high
5		I	Failure of remaining RPS channel
6		R	Reduction in reactor power
7		C	Trip of running main feedwater pump
8		M	Feedwater line break inside containment w/ ATWS
9		C	Failure of feed line block isolation valves to shut
10		C	Failure of SLC
11		C	HPCS restricted flow failure (100gpm)

* (N)ormal, (R)eactivity, (I)nstrument, (C)omponent, (M)ajor

Op-Test No.: 2000301 Scenario No.: 3 Event No.: 1 Page 2 of 12

Event Description: Monthly run surveillance on the Div I EDG

Time	Position	Applicant's Actions or Behavior
	SRO	Directs BOP operator to complete PS 9080.01, Diesel Generator
		1A(1B) Operability - Manual and Quick Start Oper
	RO	Completes shutdown of 1A Emergency Diesel Generator IAW
		PS 9080.01.
		Reports completion of the surveillance to the SRO
	SRO	Acknowledges receipt of completion report. Restores EDG to
		operable status.
	*	PS9080.01 Not provided with reference materials.

Op-Test No.: 2000301 Scenario No.: 3 Event No.: 2 Page 3 of 12

Event Description: Loss of main condenser vacuum

Time	Position	Applicant's Actions or Behavior
	BOP	Observes and reports significant increase in Off Gas flow
	RO	Identifies lowering condenser vacuum
	SRO	Diagnose potential loss of main heat sink
		Directs RO to reduce reactor power as necessary to maintain
		condenser vacuum.
	BOP	Directs D man to investigate lowering condenser vacuum
	RO	Reduces turbine load as necessary to maintain condenser vacuum
		Additional actions covered in major transient discussion

Op-Test No.: 2000301 Scenario No.: 3 Event No.: 3 Page 4 of 12

Event Description: RPV level instrument fails high

Time	Position	Applicant's Actions or Behavior
	RO	Detects and reports transmitter failure to SRO
	SRO	Contacts C & I, reviews ORM; declares the L-8 trip inop and enters ORM, Action 3.2.12.b
	RO	Takes manual control of level control system, restores level to normal band. Selects another channel for control, returns level control system to automatic.

Op-Test No.: 2000301 Scenario No.: 3 Event No.: 4 Page 5 of 12

Event Description: Control Room HVAC rad monitor fails high

Time	Position	Applicant's Actions or Behavior
	BOP	Responds to HI RADIATION CONT RM HVAC SYST DIVISION 1(2) annunciator on P-801, informs SRO
	SRO	Determines if manual activation is required, Refers to ITS LCO 3.3.7.1 for further guidance.
	BOP	Depresses both Control Room Makeup Train Hi Rad initiation pushbuttons.
		Verifies: 0VC09YA(B), Sply Air Trn A(B) Filt Inlet Dmpr opens. 0VC10YA(B), Sply Air Trn A(B) Filt Byp Dmpr closes. 0VC11YA(B), Sply Air Trn A(B) Filt Outlet Dmpr opens.
		Verifies running or start 0VC05CA(B), Cont Rm HVAC A(B) MU Air Fan.
		Verifies the following dampers open: 0VC02YA(B), Cont Rm Trn A(B) MU Air Dmpr. 0VC06YA(B), Cont Rm MU Trn A(B) Outlet Dmpr
		Verifies 0VC114YA(B), Cont Rm MU Trn A(B) Flow Cont Dmpr. modulates.
		Verifies the following dampers close: a) 0VC03YA(B), Cont Rm Trn A Min OS Dmpr. b) 0VC05YA(B), MCR Max Intake & Purge Dmpr. c) 0VC48YA(B), MCR Max Intake & Purge Dmpr. d) 0VC49YA(B), MCR Max Intake & Purge Dmpr. e) 0VC81YA(B), MCR Max Intake & Purge Dmpr. f) 0VC115YA(B), Cont Rm Trn A Min OS Dmpr. g) 0VC69Y, MCR Locker Rm Exhaust Dmpr. h) 0VC70Y, MCR Locker Rm Exhaust Dmpr.
		Verifies 0VC11C, MCR Locker Rm Exhaust Fan is not running

Op-Test No.: 2000301 Scenario No.: 3 Event No.: 5, 6 Page 6 of 12

Event Description: Failure of remaining RPS channel

Time	Position	Applicant's Actions or Behavior
	C&I	Reports to SRO that a component (to be determined during validation) in the RPS channel tripped has been determined to be failed. There is a manufacturer's recall on the component and the other three RPS channels also contain the failed component.
	SRO	Determines RPS is inoperable IAW 3.3.1.1 and must be in Mode 2 within 8 hours (3.3.1.1.G.1)
		Directs RO to begin reactor power reduction
	RO	Begins reducing reactor power in accordance with SRO instructions. (In conjunction with decreasing vacuum problem.)

Op-Test No.: 2000301 Scenario No.: 3 Event No.: 7 Page 7 of 12

Event Description: Trip of running main feedwater pump

Time	Position	Applicant's Actions or Behavior
	RO	Detects trip of running TDFWP, reports to SRO
	SRO	Directs RO to reduce reactor power to maintain reactor vessel level above level 3. May direct the RO to emergency start a feed pump.
	RO	Reduces reactor power to match steam flow with existing feedwater flow IAW CPS 3005.01, Unit Power Changes.
		May attempt to restore feedwater flow by starting the tripped TDRFP or MDRFP.
		If RPV level was not maintained above level 3, then the RO refers to CPS 4100.01, Reactor Scram and CPS 4401.01, EOP-1 RPV Control.
		To emergency start the TDRFP, verify/perform the following: Put the RFP Man/Auto Transfer switch in MANUAL and the Manual Speed Control Potentiometer at the ZERO speed position (fully counterclockwise). If there is a need for high flow rates to the RPV, then Open/verify open the RFP 1A(B) Disch Vlv 1FW002A(B), otherwise shut/verify shut the RFP 1A(B) Disch Vlv 1FW002A(B). Start the TDRFP by depressing the RFPT 1A(B) RESET pushbutton. Monitor/Operate TDRFP A(B) Min Flow 1FW010A(B) as necessary per section 8.1.14 to prevent excessive vibration. Raise RFPT speed as necessary to control RPV injection rate. If 1FW002A(B) is open and TDRFP speed is greater than 2370 rpm, then Control may be transferred to the RFPT 1A(1B) Flow Controller.

Op-Test No.: 2000301 Scenario No.: 3 Event No.: 8 Page 8 of 12

Event Description: Feedwater line break inside containment w/ ATWS

Time	Position	Applicant's Actions or Behavior
	RO/BOP	Detects rising drywell pressure or increasing feed flow rate, informs SRO.
	SRO	Announces indications, directs investigation, power reduction.
	RO/BOP	Monitor for area equipment/floor drain sumps starting on high level. Possible group isolations due to degrading conditions. Refers to CPS No. 4001.02, AUTOMATIC ISOLATION for descriptions. Possible reactor scram due to high drywell pressure (1.68 psig) or MSIV group 1 isolation. Fission product monitor system isolates on high drywell pressure (1.68 psig) or RPV level 2 (-45.5 in.)
	SRO	Directs reactor scram prior to reaching 1.68 psig drywell pressure or level 3. Enters EOP-1, RPV Control
*	RO	Places mode switch to shutdown when directed by SRO or when deemed necessary. Detects failure of rods to insert. Informs SRO of ATWS condition.
		Announces containment evacuation.
*		Performs alternate rod insertion while following scram procedure.
	BOP	Manually opens SRVs as needed to stabilize RPV pressure below 960 psig. May reset Low-Low Setpoint Logic per CPS No. 3101.01 (MS), SRV - Manual Operation.
		Starts SBGT (one train) on the primary CNMT per CPS No. 3319.01, STANDBY GAS TREATMENT (VG), and shuts down the CNMT Bldg HVAC per CPS No. 3408.01, (VR/VQ).
		CPS No. 41001
		Trip/verify TG tripped, then open GCBs 4506 & 4510, open the generator MOD 4508, and trip open the exciter field breaker.
	RO	Select IRM on IRM/APRM recorders, and insert IRM and SRM detectors to follow power decrease.
	SRO	Determines shutdown criteria not met, Enters EOP-1A, ATWS Directs ADS inhibited, manual scram, initiate ARI, start SLC
		Directs actions of CPS No. 4408.01, Alternate Rod Insertion

* critical task

Op-Test No.: 2000301 Scenario No.: 3 Event No.: 8 Page 9 of 12

Event Description: Feedwater line break inside containment w/ ATWS

Time	Position	Applicant's Actions or Behavior
	RO	As required, defeats the following interlocks per CPS No. 4410.00C012, DEFEATING ATWS INTERLOCKS: 1) CNMT IA Isolation, 2) RPS Logic Trips, 3) ARI Logic Trips, and 4) Rod Pattern Controller. Resets reactor scram and ARI/RPT trips. Verify scram discharge volume is drained. Arms and depresses all 4 MANUAL SCRAM push-buttons or all 4 ARI/RPT manual initiation pushbuttons
		Directs opening the following breakers: 1C71-P011A: BRKS CB29 through 32. 1C71-P011B: BRKS CB23 through 26.
		May have C-man open both 1C11-F116 and F117, CRD Suction Filter Bypass. If required, starts another CRD pump. Takes manual control of CRD Hydraulics Flow Control, C11-R600, to raise Drive Water Diff Press, C11-R602 up to 350 psid. (Max indicated value on C11-R602) Selects a rod or rod gang and inserts control rod(s) using either continuous INSERT or IN TIMER SKIP button.
	SRO	If drywell temperature reaches 330°F, initiates blow down. If primary containment temperature reaches 122°F, starts all containment cooling, initiates containment spray before containment temperature reaches 185°F, initiates blowdown if containment temperature reaches 185°F.
		May start mixers, SBGT, and/or VR/VQ before containment pressure reaches 1.68 psig. Blowdown initiated before PSP exceeded.
*		Directs operators to lower water level (terminate and prevent) until power is below 5% or -140" or all SRVs stay closed w/ drywell pressure less than 1.68 psig.
		After control rods are inserted, directs restoration of level to normal level.

Op-Test No.: 2000301 Scenario No.: 3 Event No.: 9 Page 10 of 12

Event Description: Failure of feed line block isolation valves to shut

Time	Position	Applicant's Actions or Behavior
	RO	Detects failure of feedwater block isolation valves to shut.
	SRO	Directs operators to manually shut feedwater block isolation valves.
	BOP	Attempts to isolate feedwater. Reports inability to shut feed block isolation valves

Op-Test No.: 2000301 Scenario No.: 3 Event No.: 10 Page 11 of 12

Event Description: Failure of SLC

Time	Position	Applicant's Actions or Behavior
	BOP	After initiating SLC, determines SLC is not injecting into the vessel, informs SRO
	SRO	Sends an auxiliary operator to investigate SLC failure, ensures control rods are being inserted.

Op-Test No.: 2000301 Scenario No.: 3 Event No.: 11 Page 12 of 12

Event Description: HPCS restricted flow failure (100gpm)

Time	Position	Applicant's Actions or Behavior
	BOP	Discovers, reports minimum HPCS flow to SRO
	SRO	Directs manual control of HPCS, establish full flow
	BOP	Takes manual control of HPCS flow control, discovers no additional manual control is available. Abandons efforts to control HPCS.

Facility: Clinton Power Station | Date of Exam: June 12, 2000 | Exam Level: RO

	Item Description				Initial a	Initial b*	Initial c#
1.	Questions and answers technically accurate and applicable to facility				JH AMS	JH	DM
2.	a. NRC K/As referenced for all questions b. Facility learning objectives referenced as available				JH AMS	JH	DM
3.	RO/SRO overlap is no more than 75 percent, and SRO questions are appropriate per Section D.2.d of ES-401				JH AMS	JH	DM
4.	No more than 25 questions are duplicated from [practice exams, quizzes, and] the last two NRC licensing exams; enter the actual number of duplicated questions at right	NRC	Other		JH AMS	JH	DM
		6	n/a				
5.	[No (Less than 5 percent) question duplication from the license screening/audit exam (if independently written)]				n/a	n/a	n/a
6.	Bank use meets limits (no more than 50 percent from the bank, at least 10 percent new, and the rest modified); enter the actual question distribution at right	Bank	Modified	New	JH AMS	JH	DM
		24	29	47			
7.	Between 50 and 60 percent of the questions on the exam (including 10 new questions) are written at the comprehension/analysis level; enter the actual question distribution at right	Memory	C/A		JH AMS	JH	DM
		50	50				
8.	References/handouts provided do not give away answers				JH AMS	JH	DM
9.	Question distribution meets previously approved examination outline; deviations are justified				JH AMS	JH	DM
10.	Question psychometric quality and format meet ES, Appendix B, guidelines				JH AMS	JH	DM
11.	The exam contains 100, one-point, multiple choice items; the total is correct and agrees with value on cover sheet				JH AMS	JH	DM

	Printed Name / Signature	Date
a. Author	J. Hopkins / J. Hopkins 5-26-2000 A. Stone / A. Stone	5/26/2000
b. Facility Reviewer(*)	D. Muller / D. Muller	5/27/2000
c. NRC Chief Examiner(*)	D. McNeil / David R. McNeil	06/08/00
d. NRC Regional Supervisor(*)	D. Hills / David E. Hills	6/9/00

Note: * The facility reviewer's signature is not applicable for NRC-developed examinations; two independent NRC reviews are required.
See special instructions (Section E.2.c) for Items 1, 4, 5, and 6.
[ ] The items in brackets do not apply to NRC-prepared examinations.

Authorization to validate: David R. McNeil (Chief Examiner) 06/02/00 (date) David E. Hills (Branch Chief) 6/2/00 (date)

Facility: Clinton Power Station | Date of Exam: June 12, 2000 | Exam Level: SRO

	Item Description				Initial a	Initial b*	Initial c#
1.	Questions and answers technically accurate and applicable to facility				JH AMB	dm	dm
2.	a. NRC K/As referenced for all questions b. Facility learning objectives referenced as available				JH AMB	dm	dm
3.	RO/SRO overlap is no more than 75 percent, and SRO questions are appropriate per Section D.2.d of ES-401				JH AMB	dm	dm
4.	No more than 25 questions are duplicated from [practice exams, quizzes, and] the last two NRC licensing exams; enter the actual number of duplicated questions at right	NRC	Other		JH AMB	dm	dm
		3	n/a				
5.	[No (Less than 5 percent) question duplication from the license screening/audit exam (if independently written)]				n/a	n/a	n/a
6.	Bank use meets limits (no more than 50 percent from the bank, at least 10 percent new, and the rest modified); enter the actual question distribution at right	Bank	Modified	New	JH AMB	dm	dm
		23	21	56			
7.	Between 50 and 60 percent of the questions on the exam (including 10 new questions) are written at the comprehension/analysis level; enter the actual question distribution at right	Memory	C/A		JH AMB	dm	dm
		~~52~~ 48	~~48~~ 52				
8.	References/handouts provided do not give away answers				JH AMB	dm	dm
9.	Question distribution meets previously approved examination outline; deviations are justified				JH AMB	dm	dm
10.	Question psychometric quality and format meet ES, Appendix B, guidelines				JH AMB	dm	dm
11.	The exam contains 100, one-point, multiple choice items; the total is correct and agrees with value on cover sheet				JH AMB	dm	dm

	Printed Name / Signature	Date
a. Author	J. Hopkins / J Hopkins 5-26-2000 A. Stone / A. Stone	5/26/2000
b. Facility Reviewer(*)	D. Muller / D Muller	5/27/2000
c. NRC Chief Examiner(*)	D. McNeil / Scott R. McNeil	06/05/00
d. NRC Regional Supervisor(*)	D. Hills / David E. Hills	6/9/00

Note: * The facility reviewer's signature is not applicable for NRC-developed examinations; two independent NRC reviews are required.
See special instructions (Section E.2.c) for Items 1, 4, 5, and 6.
[ ] The items in brackets do not apply to NRC-prepared examinations.

Authorization to validate: Scott R. McNeil (Chief Examiner) 06/05/00 (date) David E. Hills (Branch Chief) 6/12/00 (date)

NRC Submitted Written Examination with Facility Comments

*QNUM	600001
*HNUM	
*ANUM	
*QCHANGED	FALSE
*ACHANGED	FALSE
*QDATE	2000/06/05
*FAC	461
*RTYP	BWR-GE6
*EXLEVEL	B
*EXMNR	
*QVAL	1.0
*SEC	1/1
*SUBSORT	memory
*KA	295005K101

*QUESTION

Following a main generator load rejection from full Rated Thermal Power (RTP), a reactor scram is initiated to reduce reactor power in anticipation of a . . .

a. reactor water level increase.

b. reactor water level decrease.

c. reactor pressure increase.

d. reactor pressure decrease.

*ANSWER

c.

*REFERENCE

LP87212, Reactor Protection System, Student Handbook, Pg 22 of 32.

New (Hope Creek 1 EQB; QNUM 17038)

Level of Difficulty (1 - 5): 2

*QNUM 600002
*HNUM
*ANUM
*QCHANGED FALSE
*ACHANGED FALSE
*QDATE 2000/06/05
*FAC 461
*RTYP BWR-GE6
*EXLEVEL R
*EXMNR
*QVAL 1.0
*SEC ½
*SUBSORT memory
*KA 295013 2.4.18
*QUESTION
The reason for maintaining suppression pool temperature below the Heat Capacity Limit (Figure P on EOP-6, Primary Containment) is:

a. to provide adequate subcooling in the pool to prevent chugging of the SRV tailpipes and subsequent damage to the SRVs and pool.

b. to assure the suppression pool can absorb sufficient energy to prevent exceeding the containment design temperature.

c. to assure the containment design pressure will not be exceeded due to compression of the non-condensable gasses released by the elevated water temperature.

d. to provide adequate margin against boiling and subsequent release of radionuclides scrubbed from the primary coolant during the design basis accident.

*ANSWER
b.
*REFERENCE
Clinton EOP Technical Bases, EOP-6, Part D, pgs. 8-14 & 8-15
New (Similar to Hope Creek EQB QNUM 29110)
Level of Difficulty (1 - 5): 2

*QNUM 600003
*HNUM
*ANUM
*QCHANGED FALSE
*ACHANGED FALSE
*QDATE 2000/06/05
*FAC 461
*RTYP BWR-GE6
*EXLEVEL R
*EXMNR
*QVAL 1.0
*SEC 1/3
*SUBSORT memory
*KA 205000 2.1.32
*QUESTION
Given the following:

- The plant is in Mode 5.
- Fuel is being moved in the RPV.
- Shutdown Cooling (SDC) is being provided by RHR-B through the LPCI injection path.

SDC operation in this lineup is minimized due to the potential for:

a. the RHR pump discharge relief valve opening and injecting RPV coolant into the suppression pool.

b. damage to the RHR heat exchanger tubes due to excessive vibration from high flow.

c. damage to the fuel assemblies in the vicinity of the LPCI nozzle.

d. damage to the LPCI nozzle due to thermal fatigue and vibration.

*ANSWER
c.
*REFERENCE
LP85205, RHR, Student Handbook, pg. 21/47.
Modified (Clinton Exam Bank # 03955)
Level of Difficulty (1 - 5): 3

*QNUM 600004
*HNUM
*ANUM
*QCHANGED FALSE
*ACHANGED FALSE
*QDATE 2000/06/05
*FAC 461
*RTYP BWR-GE6
*EXLEVEL R
*EXMNR
*QVAL 1.0
*SEC 1/3
*SUBSORT memory
*KA 295036K303
*QUESTION
In the Water Level branch of EOP-8, "Secondary Containment Control," there is a decision block that requires action if a primary system is discharging into secondary containment AND the discharge cannot be isolated. A system is considered a Primary System in this step if it is:

a. inside primary containment and will be challenged by the adverse Secondary Containment conditions

b. physically connected to the reactor vessel and reducing reactor pressure will decrease the break flow.

c. needed to assure adequate core cooling and to maintain and/or recover reactor vessel level and pressure

d. needed to shutdown and/or maintain the reactor shutdown and penetrates the primary containment

*ANSWER
b.
*REFERENCE
Clinton EOP Technical Basis, EOP-8, "Secondary Containment Control," pg. 10-10.
Modified (Similar to Clinton EQB QNUM 18900 & Clinton Exam Bank Number 09905)
Level of Difficulty (1 - 5): 3

*QNUM 600005
*HNUM
*ANUM
*QCHANGED FALSE
*ACHANGED FALSE
*QDATE 2000/06/05
*FAC 461
*RTYP BWR-GE6
*EXLEVEL R
*EXMNR
*QVAL 1.0
*SEC 2/1
*SUBSORT memory
*KA 201001A403
*QUESTION
Given that the plant was operating at 100% RTP and the operating CRD pump tripped. Choose the statement which describes the POTENTIAL CONSEQUENCES of immediately restarting one of the CRD pumps without first closing the Control Rod Drive Hydraulic System Flow Control Valve (FCV).

a. No consequences. The FCVs automatically close when the CRD pump trips.

b. Multiple control rods may drift due to the pressure surge in the cooling water header.

c. ~~The CRD pump will trip on motor overcurrent while the CRD Header repressurizes.~~ 1CH-F083, CRD supply to Containment Outboard Isolation valve, will shut on high Δ flow.

d. RPV water level indication (notching) may be affected due to the pressure surge in the reference leg backfill.

*ANSWER
b.
*REFERENCE
LP85201-02, Control Rod Drive Hydraulic System, Student Handbook,
Sections [.1.8.8 &.1.8.28] and (.1.4.6)
CPS 3304.01, Control Rod Hydraulic & Control, Section 8.3.4
Direct (Clinton Exam Bank Q # 07467)
Level of Difficulty (1 - 5): 3

c. is arguably correct based on actual system response.

*QNUM 600006
*HNUM
*ANUM
*QCHANGED FALSE
*ACHANGED FALSE
*QDATE 2000/06/05
*FAC 461
*RTYP BWR-GE6
*EXLEVEL R
*EXMNR
*QVAL 1.0
*SEC 2/1
*SUBSORT memory
*KA 201005K602
*QUESTION

When the control rod reached position 24

At the P680 panel, a control rod was being withdrawn from position 12 to position 24. ~~During the withdrawal~~, the operator identified that the digital position indication for the selected rod had alternately displayed a numerical rod position and the letters "FF." Based on the symptoms provided, the RC&IS was indicating that:

a. the Rod Pattern Controller (RPC) was not longer evaluating the rod.

b. one of the Position Indicator Probes (PIP) had been bypassed.

c. one of the PIPs ~~has failed closed~~. Reed Switch had failed

d. both ~~one~~ of the PIPs ~~has failed open~~ had Reed Switches had failed

*ANSWER
c.
*REFERENCE
LP87401-02, Rod Control & Information System, Student Handbook, pgs. 31-41 to 32-41.
New
Level of Difficulty (1 - 5): 3

*QNUM 600007
*HNUM
*ANUM
*QCHANGED FALSE
*ACHANGED FALSE
*QDATE 2000/06/05
*FAC 461
*RTYP BWR-GE6
*EXLEVEL R
*EXMNR
*QVAL 1.0
*SEC 2/1
*SUBSORT higher
*KA 203000K303
*QUESTION
Given that following conditions:

- All of the required conditions ~~of a blowdown~~ for automatic ~~start~~ actuation of ADS have been met.
- Blowdown is in progress.

If ALL of the low pressure ECCS pumps trip off, which one of the following describes how the Automatic Depressurization System (ADS) is affected?

a. All ADS valves will shut and a low pressure ECCS pump must be restarted to continue the blowdown

b. All ADS valves will shut. The blowdown can be continued by depressing the Channel A & B manual initiation pushbuttons.

c. The blowdown will continue and will stop when the initiation signal has cleared and the ADS Logic Seal-in Reset pushbutton is depressed.

d. The blowdown will continue and will stop automatically when RPV level is greater than Level 1 and the ADS Inhibit Switches are placed in "Inhibit."

*ANSWER
c.
*REFERENCE
LP87218, CPS 3101.01
Direct (Clinton Exam Bank Q # 07352)
Level of Difficulty (1 - 5): 2

*QNUM 600008
*HNUM
*ANUM
*QCHANGED FALSE
*ACHANGED FALSE
*QDATE 2000/06/05
*FAC 461
*RTYP BWR-GE6
*EXLEVEL R
*EXMNR
*QVAL 1.0
*SEC 2/1
*SUBSORT memory
*KA 209001K113
*QUESTION
The Reactor Recirculation pumps were shifted to fast speed during a reactor startup to full RTP. Immediately after the pump shift, the LPCS OUT OF SERVICE annunciator alarmed. The investigation determined the alarm was due to the differential pressure between the LPCS sparger and the:

a. HPCS sparger.

b. LPCI-A injection line.

c. CRD reference leg keep fill line.

d. above core plate d/p pressure line.

*ANSWER
b.
*REFERENCE
LP85209-03, Low Pressure Core Spray, Student Handbook, pg. 23/27.
Modified (Clinton Exam Bank Q# 06377)
Level of Difficulty (1 - 5): 2

*QNUM 600009
*HNUM
*ANUM
*QCHANGED FALSE
*ACHANGED FALSE
*QDATE 2000/06/05
*FAC 461
*RTYP BWR-GE6
*EXLEVEL R
*EXMNR
*QVAL 1.0
*SEC 2/2
*SUBSORT memory
*KA 214000K501
*QUESTION
A coupled control rod has been fully withdrawn. ~~to its backseat position~~. The indications for that individual control rod on the P680 are:

a. "Red" full out light and "--" rod position display.

b. "Red" full out light and " 48" in the rod position display.

c. "Rod Drift" alarm and " 48" in the rod position display.

d. "Rod Overtravel" alarm and "--" in the rod position display.

*ANSWER
b.
*REFERENCE
LP87401-02, RC&IS, Student Handbook, pgs. 10, 11,& 22 of 41; Figure 4.
CPS 3304.02, RC&IS, Sections 8.1.8.9; 8.1.8.10; & 8.2.6
New (Perry EQB QNUM 30661)
Level of Difficulty (1 - 5): 2

*QNUM 600010
*HNUM
*ANUM
*QCHANGED FALSE
*ACHANGED FALSE
*QDATE 2000/06/05
*FAC 461
*RTYP BWR-GE6
*EXLEVEL R
*EXMNR
*QVAL 1.0
*SEC 2/1
*SUBSORT higher
*KA 215003A104
*QUESTION
A reactor startup was in progress with the intermediate range monitors (IRMs) on Range 2. The operator, while withdrawing source range monitor detectors, inadvertently selected the IRM "A" detector drive unit.

Which of the following describes the results of selecting the IRM "A" detector drive unit?

a. A ½ scram signal is generated.

b. A rod block signal is generated.

c. The IRM "A" detector will not withdraw.

d. An IRM Upscale Trip signal is generated.

*ANSWER
b.
*REFERENCE
LP87409-01, Intermediate Range Monitors System (IRM), Student Handbook, pgs. 14 -18/27.
Direct (Clinton Exam Bank Q # 06459)
Level of Difficulty (1 - 5): 3

*QNUM 600011
*HNUM
*ANUM
*QCHANGED FALSE
*ACHANGED FALSE
*QDATE 2000/06/05
*FAC 461
*RTYP BWR-GE6
*EXLEVEL B
*EXMNR BANK
*QVAL 1.0
*SEC 2/3
*SUBSORT higher
*KA 215001K105
*QUESTION
The following conditions exist:

- Reactor power is 100%.
- The Traversing Incore Probe (TIP) system is in operation.
- A TIP detector is within the core.

If a C&I technician caused an error equivalent to a 100 r/hr containment radiation level signal and then reset the isolation signal within one minute, which of the following would describe the response of the TIP system?

a. A "Tip Isolation Off Normal" alarm would occur and the in-core detector would automatically withdraw until the isolation was reset.

b. Any TIP detector NOT in its shield shifts to manual reverse and withdraws to the shield chamber. Two minutes after the detector was in its chamber, the ball valve would close.

c. Any TIP detector NOT in its shield shifts to manual reverse and withdraws to the shield chamber. The TIP would continue to withdraw until the Group II isolation was reset.

d. The TIP detector shifts to manual reverse and withdraws to the shield chamber. The ball valve will close when the detector is in the shield.

*ANSWER
d.
*REFERENCE
3322.01
Direct (Clinton Exam Bank Q # 06459)
Level of Difficulty (1 - 5): 3

Replace - TIPS are inside containment

Identified by exam reviewers - maybe a potential problem. Since it was from the CPS bank we retained it. During validation CPS disclosed that many Questions in their bank are not CPS valid. This was one of them

*QNUM 600012
*HNUM
*ANUM
*QCHANGED FALSE
*ACHANGED FALSE
*QDATE 2000/06/05
*FAC 461
*RTYP BWR-GE6
*EXLEVEL R
*EXMNR
*QVAL 1.0
*SEC 2/1
*SUBSORT memory
*KA 215005A107
*QUESTION
During steady state power operations, the APRM Gain Adjustment Factor (AGAF) for APRM-C is 1.04. The indication from APRM C is _____ because _____.

SELECT the choice that fills in the blanks.

a. conservative / indicated power is GREATER THAN actual thermal power.

b. NON-conservative / actual thermal power is GREATER THAN indicated power.

c. conservative / indicated power is LESS THAN actual thermal power.

d. NON-conservative / actual thermal power is LESS THAN indicated power.

*ANSWER
b.
*REFERENCE
LP87411, APRM System, Student Handbook, pg. 9/28.
Direct (Clinton RO Exam, 2/98, Q # 25)
Level of Difficulty (1 - 5): 2

*QNUM 600013
*HNUM
*ANUM
*QCHANGED FALSE
*ACHANGED FALSE
*QDATE 2000/06/05
*FAC 461
*RTYP BWR-GE6
*EXLEVEL R
*EXMNR
*QVAL 1.0
*SEC 2/1
*SUBSORT higher
*KA 218000A403
*QUESTION
Given the following conditions:

- The Automatic Depressurization System (ADS) has automatically initiated.
- All ADS valves are open.
- Reactor level is -155 inches and lowering.
- Drywell pressure is 3.0 psig and slowly lowering.

If the ADS logic seal in reset pushbuttons (A/E & B/F) are depressed, the ADS valves will:

a. immediately close and will remain closed.

b. immediately close, but re-open after 105 seconds.

c. remain open, but close after 105 seconds.

d. remain open, but close after 7 minutes and 45 seconds

*ANSWER
b.
*REFERENCE
LP87218-01, Engineered Safety Systems Actuation System, Student Handbook, pg. 39.
Modified (Clinton Exam Bank Q # 21123)
Level of Difficulty (1 - 5): 4

*QNUM	600014
*HNUM	
*ANUM	
*QCHANGED	FALSE
*ACHANGED	FALSE
*QDATE	2000/06/05
*FAC	461
*RTYP	BWR-GE6
*EXLEVEL	R
*EXMNR	
*QVAL	1.0
*SEC	2/2
*SUBSORT	higher
*KA	219000A108

*QUESTION

Given the following conditions:

- The plant was operating at 100% RTP.
- RHR-A was operating in the suppression pool cooling mode.
- A full, valid RPV water Level 1 signal was generated.

The RHR-A system will realign as follows:

	RHR-A HX Bypass Valve F048A	RHR-A Test Valve to Pool F024A
a.	Full Open	Close
b.	Full Open	Remain as is
c.	Remain as is	Remain as is
d.	Remain as is	Close

*ANSWER

a.

*REFERENCE

CPS 3312.01, Residual Heat Removal, Section 8.1.2.3

Modified (Clinton Exam Bank Q # 06366)

Level of Difficulty (1 - 5): 2

*QNUM 600015
*HNUM
*ANUM
*QCHANGED FALSE
*ACHANGED FALSE
*QDATE 2000/06/05
*FAC 461
*RTYP BWR-GE6
*EXLEVEL R
*EXMNR BANK
*QVAL 1.0
*SEC 2/3
*SUBSORT higher
*KA 233000K102
*QUESTION

FC

During performance of core alterations, RHR-A was operating in the suppression pool cooling mode and fuel pool cooling and cleanup (FPCC G41) was in ~~2 pump, 2 heat exchanger,~~ operation cooling the upper and lower fuel pools. ~~The operator at the controls discharged 2000 gallons of water from the reactor to radwaste to maintain reactor water level within the prescribed band.~~ Which one of the following ~~is~~ would describe the immediate effect on the FPCC surge tank's level indication?

If the refueling bellows developed a large leak,

a. Level goes up

b. Level goes down

c. Level remains the same

d. Level goes up, then down (over a 30 minute period)

*ANSWER
b.
*REFERENCE
CPS 3317.01
New
Level of Difficulty (1 - 5): 3

*QNUM 600016
*HNUM
*ANUM
*QCHANGED FALSE
*ACHANGED FALSE
*QDATE 2000/06/05
*FAC 461
*RTYP BWR-GE6
*EXLEVEL R
*EXMNR
*QVAL 1.0
*SEC 2/1
*SUBSORT memory
*KA 239002K108
*QUESTION
Both of the two keylock handswitches for one of the SRVs with an ADS function were placed in the OFF position. Which of the following describes the condition of the valve?

	Pressure Relief Mode	ADS mode
a.	Operate	Operate
b.	Not operate	Not operate
c.	Operate	Not Operate
d.	Not operate	Operate

*ANSWER
d.
*REFERENCE
LP85239, Main Steam System, Student Handbook, pg. 28.
New
Level of Difficulty (1 - 5): 2

*QNUM	600017
*HNUM	
*ANUM	
*QCHANGED	FALSE
*ACHANGED	FALSE
*QDATE	2000/06/05
*FAC	461
*RTYP	BWR-GE6
*EXLEVEL	R
*EXMNR	BANK
*QVAL	1.0
*SEC	2/3
*SUBSORT	higher
*KA	239003A408

*QUESTION

The unit is at 100% RTP. While on watch in the control room you overheard the Shift Manager (SM) and a Mechanical Maintenance Engineer talking about a test the engineer needs to perform. The Engineer told the SM that during the test he needed to open 1E32-F015A, MSIV A Inbd Bleed Line Test Root, and 1E32-F016A, MSIV A Inbd Bleed Line Test Shutoff, simultaneously, then shut the valves. After the "A" valves were tested, the corresponding "B," "C," and "D" valves would be tested. You should tell the SM that you will:

a. not allow the test, until power has been reduced to <80% RTP.

b. allow the test, but only if a valve lineup (restoration) is completed after the test.

c. allow the test, but not on the "B" and "D" trains because of their unique interlocks.

d. not allow the test, the valves cannot be opened at power, as steam may be dumped through the valves.

*ANSWER

d.

*REFERENCE

CPS No. 3101.01, MAIN STEAM (MS, IS & ADS), Section 6.2,MSIV-LCS operational limits

New

Level of Difficulty (1 - 5): 3

*QNUM 600018
*HNUM
*ANUM
*QCHANGED FALSE
*ACHANGED FALSE
*QDATE 2000/06/05
*FAC 461
*RTYP BWR-GE6
*EXLEVEL R
*EXMNR
*QVAL 1.0
*SEC 2/1
*SUBSORT higher
*KA 241000K308
*QUESTION
Given the following conditions:

- The plant is at 100% RTP.
- The maximum combined flow is set at 115%
- The load limit is set at 110%

If one of the turbine bypass valves fails open, the expected plant response is:
(steady state to steady state)

	Rx Pressure	Turbine Control Valve Position	Generator Load
a.	increases	close down	decreases
b.	decreases	close down	decreases
c.	increases	opens up	increases
d.	decrease	opens up	increases

*ANSWER
b.
*REFERENCE
LP87241-01, Steam Bypass & Pressure Control System, Student Handbook, pgs. 8 -13., & 36.
Modified (Clinton Exam Bank Q# 06956)
Level of Difficulty (1 - 5): 2

*QNUM 600019
*HNUM
*ANUM
*QCHANGED FALSE
*ACHANGED FALSE
*QDATE 2000/06/05
*FAC 461
*RTYP BWR-GE6
*EXLEVEL R
*EXMNR
*QVAL 1.0
*SEC 2/2
*SUBSORT memory
*KA 263000K501
*QUESTION
The Division 1 Battery Room ventilation system maintains a:

a. negative pressure to prevent hydrogen gas buildup above the flammability limit.

b. negative pressure to ensure the overall Auxiliary Building HVAC system flow is balanced.

c. positive pressure to ensure the room's dampers remain open if the exhaust fan trips.

d. positive pressure to ensure hydrogen gas be evenly distributed throughout the Auxiliary Building.

*ANSWER
a.
*REFERENCE
LP85574-02, Switchgear Heat Removal System, Student Handbook, pgs. 18/24, 19/24, & 22/24.
Modified (Clinton Exam Bank Q # 12570)
Level of Difficulty (1 - 5): 2

*QNUM 600020
*HNUM
*ANUM
*QCHANGED FALSE
*ACHANGED FALSE
*QDATE 2000/06/05
*FAC 461
*RTYP BWR-GE6
*EXLEVEL R
*EXMNR
*QVAL 1.0
*SEC 2/1
*SUBSORT memory
*KA 264000K301
*QUESTION
Given the following conditions:

- 4160 kV Bus 1A1 has tripped.
- The Emergency Diesel Generator associated with 4160 Bus 1A1 failed to start.

Without operator action, select the ECCS pump (s) which be available under these conditions?

	RHR-A	RHR-B	RHR-C	LPCS
a.	Yes	No	No	Yes
b.	No	Yes	No	Yes
c.	No	Yes	Yes	No
d.	Yes	No	Yes	No

*ANSWER
c.
*REFERENCE
CPS 4200.01, Loss of AC Power.
Modified (Clinton Exam Bank Q # 06190)
Level of Difficulty (1 - 5): 2

*QNUM 600021
*HNUM
*ANUM
*QCHANGED FALSE
*ACHANGED FALSE
*QDATE 2000/06/05
*FAC 461
*RTYP BWR-GE6
*EXLEVEL R
*EXMNR
*QVAL 1.0
*SEC 2/2
*SUBSORT higher
*KA 271000A113
*QUESTION
Given that the plant was operating at 100% RTP. A malfunction occurred in the Off Gas System which resulted in moisture carryover into the Recombiner.

The result of the moisture carryover is a/an _____(1)_____ in Recombiner Temperature and a/an _____(2)_____ in Hydrogen Concentration.

	(1)	(2)
a.	Increase	Increase
b.	Increase	Decrease
c.	Decrease	Increase
d.	Decrease	Decrease

*ANSWER
c.
*REFERENCE
LP 85271-02, Off Gas System, Student Handbook, pg. 30/34
Direct (Clinton Exam Bank Q # 21274)
Level of Difficulty (1 - 5): 2

*QNUM 600022
*HNUM
*ANUM
*QCHANGED FALSE
*ACHANGED FALSE
*QDATE 2000/06/05
*FAC 461
*RTYP BWR-GE6
*EXLEVEL R
*EXMNR BANK
*QVAL 1.0
*SEC 2/2
*SUBSORT higher
*KA 290003K401
*QUESTION
Which one of the following describes the response of the Control Room HVAC to the loss of off-site power? The Control Room HVAC mode selector switches are in NORMAL.

a. Both trains will operate in the SMOKE CLEAR mode.

b. Both trains will have to be restarted following the loss of power.

c. The non-operating train will start and operate in NORMAL mode.

d. Both trains will operate in the EMERGENCY RECIRCULATION mode.

*ANSWER
b.
*REFERENCE
CPS 3402.01
New
Level of Difficulty (1 - 5): 2

Rewrite question - not valid for CPS.
Question was imported from another BWR facility with the intent of making it CPS specific. Question was identified as potentially invalid for CPS by regional reviewers.

*QNUM 600023
*HNUM
*ANUM
*QCHANGED FALSE
*ACHANGED FALSE
*QDATE 2000/06/05
*FAC 461
*RTYP BWR-GE6
*EXLEVEL R
*EXMNR BANK
*QVAL 1.0
*SEC 2/2
*SUBSORT higher
*KA 300000K102
*QUESTION
The plant has been operating normally at 100% RTP for 221 days. The service/instrument air system is in its normal operating lineup. If a rupture were to occur in the containment instrument air piping resulting in a reduction in the service air dryer discharge pressure to 60 psig, which of the following would occur? (assume no operator action)

a. All three air compressors would be running to attempt to restore air pressure to normal. service

b. ~~The air amplifiers in the containment would continue to operate, supplying air at 160 psig.~~ The plant chilled water system chillers will shut down.

c. All service air ring header isolation valves will shut except for the Aux/Fuel Bldg Isolation Valve, 1SA038.

d. Only the Turbine Building, Auxiliary/Fuel Building, Radwaste Building, and Control Building instrument air header isolation valves will shut.

*ANSWER
b.
*REFERENCE
SD-SAIA & CPS 40004.01
New
Level of Difficulty (1 - 5): 2

can't verify air amplifiers will work as described. System description matches described.

*QNUM 600024
*HNUM
*ANUM
*QCHANGED FALSE
*ACHANGED FALSE
*QDATE 2000/06/05
*FAC 461
*RTYP BWR-GE6
*EXLEVEL R
*EXMNR
*QVAL 1.0
*SEC 1/1
*SUBSORT memory
*KA 50000K201
*QUESTION
A reactor recirculation system pipe break has occurred and drywell hydrogen (H_2) concentration indicated 1.0% on the H_2/O_2 monitoring system. This concentration of H_2 will:

a. close the H_2/O_2 sample containment isolation valves.

b. actuate an alarm on the H_2/O_2 monitoring system.

c. align CGCS for hydrogen recombiner operation

d. shift the H_2/O_2 monitoring system to accident mode.

*ANSWER
b.
*REFERENCE
LP 87406, Containment Monitoring, Student Handbook, pgs 6, 7, & 11 of 20.
New
Level of Difficulty (1 - 5): 3

*QNUM 600025
*HNUM
*ANUM
*QCHANGED FALSE
*ACHANGED FALSE
*QDATE 2000/06/05
*FAC 461
*RTYP BWR-GE6
*EXLEVEL R
*EXMNR
*QVAL 1.0
*SEC ½
*SUBSORT higher
*KA 295002K201
*QUESTION
Given the following conditions:

- The plant is operating at 30% power.
- The main turbine is synchronized to the grid.
- Some of the turbine bypass valves are open.
- Main condenser vacuum begins to lower.

CHOOSE the statement that describes the expected SEQUENCE of events to the lowering condenser vacuum condition. (assume no operator actions.)

a. The main turbine trips causing a reactor scram, then the MSIVs shut, then the bypass valves close.

b. The main turbine trips, then the MSIVs shut causing a reactor scram, then the bypass valves close.

c. The main turbine trips causing a reactor scram, then the bypass valves close, then the MSIVs shut.

d. The main turbine trips, then the bypass valves close, then the MSIVs shut causing a reactor scram.

*ANSWER
b.
*REFERENCE
CPS ~~3112.01, Condenser Vacuum, Section 8.1.4~~ 3215.01, 8.3.1
New
Level of Difficulty (1 - 5): 3

*QNUM 600026
*HNUM
*ANUM
*QCHANGED FALSE
*ACHANGED FALSE
*QDATE 2000/06/05
*FAC 461
*RTYP BWR-GE6
*EXLEVEL B
*EXMNR
*QVAL 1.0
*SEC ½
*SUBSORT memory
*KA 295001 2.2.2
*QUESTION
Given the following conditions:

- Reactor power is 98% RTP and slowly decreasing
- RPV level (NR) 35 inches and stable
- "A" recirculation loop flow is stable
- "B" recirculation loop flow is slowly decreasing

and fcv position are

Which of the following is the appropriate operator response?

a. Adjust the "A" FCV to match flow with the "B" recirculation loop.

b. Wait for the "B" recirculation loop flow to stabilize and then match loop flows.

c. Trip the "B" recirculation pump if the difference between loop flows exceeds 15%.

d. Inhibit the motion of the "B" FCV.

*ANSWER
d
*REFERENCE
CPS4008.01, Abnormal Reactor Coolant Flow
New
Level of Difficulty (1 - 5): 2

*QNUM 600027
*HNUM
*ANUM
*QCHANGED FALSE
*ACHANGED FALSE
*QDATE 2000/06/05
*FAC 461
*RTYP BWR-GE6
*EXLEVEL B
*EXMNR
*QVAL 1.0
*SEC ½
*SUBSORT higher
*KA 295003A102
*QUESTION
The plant was at 100% RTP with a normal electrical lineup when a plant transient resulted in the following:

- The reactor scrammed.
- The main turbine tripped.
- The RAT tripped on a fault pressure lockout.
- Both TDRFPs tripped.
- RPV level is -60 inches and slowly increasing

Which of the following describes the condition of the Emergency Diesel Generators (EDG)?

a. Division 3 EDG running unloaded. Division 1 and 2 EDGs remain in standby status.

b. Division 3 EDG remains in standby status. Divisions 1 and 2 EDGs running unloaded.

c. All three EDGs running unloaded.

d. All three EDGs remain in standby status.

*ANSWER
a.
*REFERENCE
LP 85264, Diesel Generator, Student Handbook, pg. 66.
LP 85571, Auxiliary Power Systems, pgs. 11, 17, 37, & 45
Direct (Clinton EQB; Question # 20987)
Level of Difficulty (1 - 5): 2

*QNUM 600028
*HNUM
*ANUM
*QCHANGED FALSE
*ACHANGED FALSE
*QDATE 2000/06/05
*FAC 461
*RTYP BWR-GE6
*EXLEVEL B
*EXMNR
*QVAL 1.0
*SEC ½
*SUBSORT higher
*KA 295004K303
*QUESTION
Given the following conditions:

- The Unit was operating at 100% RTP.
- The "B" feedwater level instrument is the controlling instrument.
- The "A" and "C" circulating water pumps are operating.

If loss of 125 volt DC MCC 1F occurred, which of the following would be the cause of the reactor scram? (assume no operator actions.)

a. MSIV closure due to low instrument air header pressure.

b. high reactor vessel level due to loss of level instrument.

c. main turbine trip due to loss of main generator exciter field.

d. low vacuum due to loss of circulating water pumps.

*ANSWER
b.
*REFERENCE
CPS 4201.01, Loss of DC Power, Section 4.4
New (Similar to Millstone EQB - QNUM 28811)
Level of Difficulty (1 - 5): 3

*QNUM 600029
*HNUM
*ANUM
*QCHANGED FALSE
*ACHANGED FALSE
*QDATE 2000/06/05
*FAC 461
*RTYP BWR-GE6
*EXLEVEL B
*EXMNR
*QVAL 1.0
*SEC 1/1
*SUBSORT higher
*KA 295006K204
*QUESTION
An abnormal condition has resulted in the following plant conditions:

- Reactor power is 38% RTP. 45% - 38% is barely above actual.
- Main turbine load is 23%.
- Turbine bypass valves are partially open.
- Total main steam flow is 38%.
- Annunciator "TCV Fast Close and MSV Trip Byp" is lit.

Under these abnormal conditions, if a main turbine trip were to occur then . . .

a. the reactor would scram on high reactor pressure.

b. a scram would occur immediately as soon the turbine control valves begin to close.

c. the turbine bypass valves would open to maintain steam header pressure, and operations would continue at the same power level.

d. the turbine bypass valves would open to control steam header pressure, but the recirc flow control valves would close, automatically reducing reactor power.

*ANSWER
a.
*REFERENCE
LP 85245, Main Turbine, Revision 1; LP 85249, Electro Hydraulic Control System, Revision 1.
Direct/slight mod
Level of Difficulty (1 - 5): 3

*QNUM 600030
*HNUM
*ANUM
*QCHANGED FALSE
*ACHANGED FALSE
*QDATE 2000/06/05
*FAC 461
*RTYP BWR-GE6
*EXLEVEL B
*EXMNR
*QVAL 1.0
*SEC 1/1
*SUBSORT memory
*KA 295007K205
*QUESTION
The plant is in Mode 4 with the RHR-B loop operating in the Shutdown Cooling (SDC) Mode. If a transient occurred which resulted in an increase of reactor pressure to 110 psig, the expected plant response is that the SDC Inboard and Outboard Isolation Valves: (assume no operator actions.)

a. close and the RHR-B pump trips.

b. remain open and the RHR-B pump trips.

c. close and the RHR-B pump continues to operate.

d. remain open and the RHR-B pump continues to operate.

*ANSWER
a
*REFERENCE
LP 85205, Residual Heat Removal System, Revision 4
Direct (RO Written 1/98, Question # 35)
Level of Difficulty (1 - 5): 2

*QNUM 600031
*HNUM
*ANUM
*QCHANGED FALSE
*ACHANGED FALSE
*QDATE 2000/06/05
*FAC 461
*RTYP BWR-GE6
*EXLEVEL B
*EXMNR
*QVAL 1.0
*SEC ½
*SUBSORT memory
*KA 295008K101
*QUESTION
Damage to equipment from excessive moisture carryover is prevented by:

a. MSIV closure at Level 8.

b. HPCS system shutdown at Level 8.

c. main turbine trip after RCIC initiation.

d. turbine feedwater pump trip after HPCS initiation.

*ANSWER
c.
*REFERENCES
LP 85217, RCIC, Student Handbook, pg. 63
LP 85259, Feedwater, Instructor Handbook, pg. 57 & Student Handbook, pg. 27
LP 85245, Main Turbine, Instructor Handbook, pgs. 47 & 48.
LP 85380, HPCS, Student Handbook, pg. 27
New
Level of Difficulty (1 - 5): 2

*QNUM 600032
*HNUM
*ANUM
*QCHANGED FALSE
*ACHANGED FALSE
*QDATE 2000/06/05
*FAC 461
*RTYP BWR-GE6
*EXLEVEL B
*EXMNR
*QVAL 1.0
*SEC 1/1
*SUBSORT memory
*KA 295009K201
*QUESTION
In EOP-1, RPV Control, the operating crew is asked if RPV level can be restored and maintained above -193 inches. A level of -193 inches corresponds to:

a. ~~the top of active fuel (TAF).~~ minimum core submergence RPV water level

b. ~~2/3 core height.~~ minimum steam cooling RPV water level.

c. instrument zero on the Fuel Zone level indication.

d. instrument zero on Wide Range level indication.

*ANSWER
b.
*REFERENCE
LP85423, Nuclear Boiler Instrumentation, Student Handbook, Figure 6
New
Level of Difficulty (1 - 5): 2

site specific terminology

*QNUM 600033
*HNUM
*ANUM
*QCHANGED FALSE
*ACHANGED FALSE
*QDATE 2000/06/05
*FAC 461
*RTYP BWR-GE6
*EXLEVEL B
*EXMNR
*QVAL 1.0
*SEC 1/1
*SUBSORT memory
*KA 295010 2.4.20
*QUESTION
EOP-6, Primary Containment Control, has been entered due to high drywell pressure. The Drywell/Containment Pressure branch prohibits using the hydrogen mixers if suppression pool level is below 13 ft., 1 in.

The pool level must be greater than or equal to 13 ft., 1 in. to:

a. provide adequate back pressure on the mixer discharge sparger

b. satisfy the hydrogen mixer starting circuit interlock.

c. provide adequate cooling and scrubbing of radioactive particles

d. allow drywell burping to remain an option for reducing drywell pressure.

*ANSWER
c.
*REFERENCES
LP 85405, Combustible Gas Control System, pg. 8, 11, 12, & 32
EOP-6 Technical Bases, pg. 8-44
New
Level of Difficulty (1 - 5): 3

*QNUM 600034
*HNUM
*ANUM
*QCHANGED FALSE
*ACHANGED FALSE
*QDATE 2000/06/05
*FAC 461
*RTYP BWR-GE6
*EXLEVEL B
*EXMNR
*QVAL 1.0
*SEC ½
*SUBSORT memory
*KA 295011K301
*QUESTION
EOP-6, Primary Containment Control, Containment Temperature Branch, directs the operators to attempt to hold containment temperature less than 185 deg F. The reason for maintaining the temperature less than 185 deg F is to:

a. assure containment integrity is maintained.

b. ensure accurate suppression pool level indication.

c. maintain long-term operability of the scram pilot valve solenoids.

d. avoid false level indications on the SLC storage tank level meter.

*ANSWER
a.
*REFERENCE
EOP-6 Technical Bases, pg. 8-39
New (similar to Grand Gulf EQB QNUM 24236)
Level of Difficulty (1 - 5): 2

*QNUM 600035
*HNUM
*ANUM
*QCHANGED FALSE
*ACHANGED FALSE
*QDATE 2000/06/05
*FAC 461
*RTYP BWR-GE6
*EXLEVEL B
*EXMNR
*QVAL 1.0
*SEC ½
*SUBSORT higher
*KA 295012K101
*QUESTION
The plant was in Mode 4 at 185 deg F; RHR-B is in shutdown cooling. If a full, valid, low RPV level 1 signal occurred during surveillance testing and all equipment operated as designed, drywell temperature will _____(1)_____ and drywell pressure will _____(2)_____?

	(1)	(2)
a.	increase	decrease
b.	decrease	increase
c.	increase	increase
d.	decrease	decrease

*ANSWER
c.
*REFERENCE
LP 85222, Drywell Cooling System, Student Handbook, pg. 41
Significantly Modified (Clinton Exam Bank - Q # 7886)
Level of Difficulty (1 - 5): 3

*QNUM 600036
*HNUM
*ANUM
*QCHANGED FALSE
*ACHANGED FALSE
*QDATE 2000/06/05
*FAC 461
*RTYP BWR-GE6
*EXLEVEL B
*EXMNR
*QVAL 1.0
*SEC 1/1
*SUBSORT higher
*KA 295014A106
*QUESTION
Given the following conditions:

- The turbine generator was in operation producing 700 MWe.
- APRM indications began to rise slowly with no change in reactor recirculation flow or rod motion.
- Feedwater temperature decreased 12 deg F.

In accordance with CPS 4005.01, Loss of Feedwater Heating, power should be reduced to:

a. 644 MWe

b. 604 MWe

c. 572 MWe

d. 532 MWe

*ANSWER
a.
*REFERENCE
CPS 4005.01, Loss of Feedwater Heating, Section 3.0 (Immediate Operator Actions)
New
Level of Difficulty (1 - 5): 4

*QNUM 600037
*HNUM
*ANUM
*QCHANGED FALSE
*ACHANGED FALSE
*QDATE 2000/06/05
*FAC 461
*RTYP BWR-GE6
*EXLEVEL B
*EXMNR
*QVAL 1.0
*SEC 1/1
*SUBSORT memory
*KA 295015A202
*QUESTION
In accordance with EOP-1~~A~~, ~~ATWS~~ RPV Control, you can determine that the reactor is shutdown ~~subcritical (with no boron injected)~~ by verifying:

a. control rod positions

b. APRMs downscale or below indicating range

c. reactor pressure decreasing

d. a negative reactor period

*ANSWER
a.
*REFERENCE
Clinton EOP Technical Bases, EOP-1~~A~~, ~~ATWS~~ RPV CONTROL
New
Level of Difficulty (1 - 5): 2

*QNUM 600038
*HNUM
*ANUM
*QCHANGED FALSE
*ACHANGED FALSE
*QDATE 2000/06/05
*FAC 461
*RTYP BWR-GE6
*EXLEVEL B
*EXMNR
*QVAL 1.0
*SEC ½
*SUBSORT higher
*KA 295016A108
*QUESTION
Given the following conditions:

- The Control Room has been evacuated in accordance with CPS 4003.01, Remote Shutdown.
- The immediate actions for CPS 4003.01 have been completed.
- The remote shutdown panel (RSP) was placed in operation.
- The Division 1 & Division 2 SRV transfer switches were placed in Emergency.

Reactor pressure is controlled by varying RCIC flow and by:

a. manual operation of the SRVs

b. automatic operation of the SRVs (low-low set) after the first one opened.

c. manual operation of the Automatic Depressurization System.

d. adjusting the main steam bypass valve pressure setpoint

*ANSWER
a.
*REFERENCE
CPS 4003.01, Remote Shutdown, Section 4.3.d
Modified (EQB #16821; Clinton Exam Bank # 06245)
Level of Difficulty (1 - 5): 3

*QNUM 600039
*HNUM
*ANUM
*QCHANGED FALSE
*ACHANGED FALSE
*QDATE 2000/06/05
*FAC 461
*RTYP BWR-GE6
*EXLEVEL B
*EXMNR
*QVAL 1.0
*SEC ½
*SUBSORT higher
*KA 295017K210
*QUESTION
During normal power operations, early indication of a cladding failure of the fuel would be indicated by increased readings on which Process Radiation Monitors (PRMs)?

a. Fuel Building Exhaust Vent Plenum

b. Standby Gas Treatment System Exhaust Stack

c. Containment Building Containment Continuous Purge Exhaust

d. Pre-treatment and Post-treatment Off Gas.

*ANSWER
d.
*REFERENCE
LP 85273, Area & Process Radiation Monitoring, Student Handbook, pgs.47 & 72
Direct (3 distractors changed - Clinton EQB QNUM 18968)
Level of Difficulty (1 - 5): 3

*QNUM 600040
*HNUM
*ANUM
*QCHANGED FALSE
*ACHANGED FALSE
*QDATE 2000/06/05
*FAC 461
*RTYP BWR-GE6
*EXLEVEL B
*EXMNR
*QVAL 1.0
*SEC ½
*SUBSORT higher
*KA 295019A202
*QUESTION
Given that there has been a break in the Instrument Air (IA) system with a continuous decrease in IA system pressure, predict the response of the CRD system.

a. The SDV vent & drain valves open and the CRD flow control valve opens.

b. The scram inlet and outlet valves close and the CRD flow control valve closes.

c. The SDV vent and drain valves open and the scram inlet and outlet valves open.

d. The SDV vent and drain valves close and the scram inlet and outlet valves open.

*ANSWER
d.
*REFERENCE
LP 85301, Service & Instrument Air, Student Handbook, pgs. 41 - 43.
New (similar to Grand Gulf EQB QNUM 18219)
Level of Difficulty (1 - 5): 2

*QNUM	600041
*HNUM	
*ANUM	
*QCHANGED	FALSE
*ACHANGED	FALSE
*QDATE	2000/06/05
*FAC	461
*RTYP	BWR-GE6
*EXLEVEL	B
*EXMNR	
*QVAL	1.0
*SEC	½
*SUBSORT	memory
*KA	295022A203

*QUESTION

Given the following conditions:

- The plant is operating at 100% RTP.
- The "A" CRD pump has tripped.
- The "B" CRD pump has not been started.

Choose the statement that ~~correctly~~ describes the effect the loss of CRD pumps has on the plant.

a. Multiple control rods will begin to drift if a pump is not returned to service within 15 minutes.

b. The control rods can still be scrammed, but the insertion time will be significantly increased.

c. Multiple control rod drive mechanism temperatures will begin to increase.

d. The control rods will not fully scram with reactor pressure alone due to pressure equalization across the drive piston.

*ANSWER

c.

*REFERENCE

CPS 3304.01, Control Rod Hydraulic & Control, Section 8.3, Abnormal Operations

Direct (Clinton Exam Bank, Q # 10581)

Level of Difficulty (1 - 5): 2

*QNUM 600042
*HNUM
*ANUM
*QCHANGED FALSE
*ACHANGED FALSE
*QDATE 2000/06/05
*FAC 461
*RTYP BWR-GE6
*EXLEVEL B
*EXMNR
*QVAL 1.0
*SEC 1/3
*SUBSORT memory
*KA 295023K101
*QUESTION
During refueling operations, the upper containment fuel pool racks must have a minimum water level above irradiated fuel seated in the rack. If the water level drops below this minimum value, there may be an insufficient volume of water to:

a. dump to the suppression pool, if required.

b. absorb decay heat if pool cooling is lost.

c. provide adequate shielding during fuel movement.

d. provide adequate net positive suction head for the fuel pool cooling system.

*ANSWER
c.
*REFERENCE
LP85233-03, Fuel Pool Cooling and Cleanup System, Student Handbook
Modified (Clinton Exam Bank, Q # 03046)
Level of Difficulty (1 - 5): 2

*QNUM 600043
*HNUM
*ANUM
*QCHANGED FALSE
*ACHANGED FALSE
*QDATE 2000/06/05
*FAC 461
*RTYP BWR-GE6
*EXLEVEL B
*EXMNR
*QVAL 1.0
*SEC 1/1
*SUBSORT higher
*KA 295024A118
*QUESTION
The plant was operating at 100% RTP with the containment continuous purge (CCP) system in operation. If an event occurred that required entry into EOP-6, Primary Containment Control, with DRYWELL/CONTAINMENT PRESSURE being the ~~affected~~ driving leg, how would the CCP system respond to the event?

a. The CCP system would realign to exhaust through the drywell purge filter trains.

b. The CCP supply and exhaust valves would close/isolate.

c. The CCP supply damper would modulate open.

d. The second CCP exhaust fan would start.

*ANSWER
b
*REFERENCE
LP 85455, Containment Ventilation and Drywell Purge System, Student Handbook, pgs 50-57.
New
Level of Difficulty (1 - 5): 3

*QNUM 600044
*HNUM
*ANUM
*QCHANGED FALSE
*ACHANGED FALSE
*QDATE 2000/06/05
*FAC 461
*RTYP BWR-GE6
*EXLEVEL B
*EXMNR
*QVAL 1.0
*SEC 1/1
*SUBSORT memory
*KA 295025A204
*QUESTION
The Pressure Branch of EOP-1, RPV Control, allows the use of SRVs for pressure control if suppression pool level is above 8 feet. A suppression pool level of 8 feet corresponds to the minimum:

a. level for the suppression pool cooling mode of RHR.

b. indicated suppression pool water level.

c. level to cover the top row of horizontal vent holes in the weir wall.

d. NPSH\Vortex limits for ECCS\RCIC operation.

*ANSWER
b
*REFERENCE
Clinton EOP Technical Bases, EOP-1, RPV CONTROL
New
Level of Difficulty (1 - 5): 3

*QNUM	600045
*HNUM	
*ANUM	
*QCHANGED	FALSE
*ACHANGED	FALSE
*QDATE	2000/06/05
*FAC	461
*RTYP	BWR-GE6
*EXLEVEL	B
*EXMNR	
*QVAL	1.0
*SEC	½
*SUBSORT	memory
*KA	295026K301

*QUESTION

Following a small break LOCA, indicated wide range RPV level is -20" and slowly increasing due to RCIC injection from the CST. Other plant parameters are as follows:

- Suppression pool level ~~16.3~~ 16.3 feet, slowly increasing
- Suppression pool temp 140 deg F, slowly increasing
- Containment pressure ~~4.0~~ 1.8 psig, slowly increasing

Given the above plant conditions, WHICH ONE of the following identifies the MAXIMUM allowable reactor pressure?

a. 425 psig

b. 500 psig

c. 550 psig

d. 840 psig

*ANSWER

d.

*REFERENCE

Clinton EOP 6, Primary Containment Control (PROVIDED)

New

Level of Difficulty (1 - 5): 3

*QNUM 600046
*HNUM
*ANUM
*QCHANGED FALSE
*ACHANGED FALSE
*QDATE 2000/06/05
*FAC 461
*RTYP BWR-GE6
*EXLEVEL B
*EXMNR
*QVAL 1.0
*SEC ½
*SUBSORT higher
*KA 295027K102
*QUESTION
Given the following conditions:

- A LOCA has occurred .
- The reactor has been scrammed.
- Reactor pressure 200 psig
- Drywell temp. 310 deg F.
- Containment temp. 280 deg F.
- Narrow Range (NR) water level indication is 13 inches.
- Wide Range (WR) water level indication is -36 inches.
- Upset Range (UR) water level indication is 28 inches.

Based on the current plant conditions, WHICH ONE of these indications can be used to determine RPV water level? (see Detail A, attached)

a. All three are valid.

b. NR and WR are valid, UR is invalid

c. UR and WR are valid, NR is invalid

d. NR and UR are valid, WR is invalid.

*ANSWER
b.
*REFERENCE
Clinton EOP Technical Bases, Variable & Curves Section, Detail A (pgs 12-17 to 12-19)
New (Similar to Grand Gulf EQB; QNUM 19171)
Level of Difficulty (1 - 5):3

*QNUM 600047
*HNUM
*ANUM
*QCHANGED FALSE
*ACHANGED FALSE
*QDATE 2000/06/05
*FAC 461
*RTYP BWR-GE6
*EXLEVEL B
*EXMNR
*QVAL 1.0
*SEC ½
*SUBSORT memory
*KA 295029K301
*QUESTION

EOP-6, Primary Containment Control, requires blowdown if suppression pool level cannot be maintained within the safe region of the "SRV Tail Pipe Limit" curve. Which of the following will drive the plant toward the UNSAFE portion of the curve and an increased possibility of SRV tail pipe failure?

a. decreasing suppression pool water level, decreasing reactor pressure

b. decreasing suppression pool water level, increasing reactor pressure

c. increasing suppression pool water level, decreasing reactor pressure

d. increasing suppression pool water level, increasing reactor pressure

*ANSWER
d.
*REFERENCE
Clinton EOP Technical Bases, pg. 12-57
New (Similar to Brunswick EQB; QNUM 24616)
Level of Difficulty (1 - 5): 2

*QNUM 600048
*HNUM
*ANUM
*QCHANGED FALSE
*ACHANGED FALSE
*QDATE 2000/06/05
*FAC 461
*RTYP BWR-GE6
*EXLEVEL B
*EXMNR
*QVAL 1.0
*SEC ½
*SUBSORT higher
*KA 295030A104
*QUESTION
~~Give~~ the following conditions for the Suppression Pool Makeup System (SM)
Given

	Div 1	Div 2
Mode Selector Switch:	Enable	Enable
Normal - Inop Handswitch:	Normal	Inop
Normal - Test Handswitch:	Normal	Test

Which one of the following describes the immediate response of the SM system to a High Drywell pressure signal under the given conditions?

a. Division 1 (only) Suppression Pool Dump Valves open.

b. Division 1 and 2 Suppression Pool Dump Valves open.

c. Permissive signal to open the Division 1 (only) Suppression Pool Dump Valves.

d. Permissive signal to open the Division 1 and 2 Suppression Pool Dump Valves.

*ANSWER
d.
*REFERENCE
LP 85408-01, Suppression Pool Makeup System, Student Handbook, pgs 13 - 17.
Direct - Clinton Exam Bank; Question # 07991 (Slightly Modified)
Level of Difficulty (1 - 5): 2

*QNUM 600049
*HNUM
*ANUM
*QCHANGED FALSE
*ACHANGED FALSE
*QDATE 2000/06/05
*FAC 461
*RTYP BWR-GE6
*EXLEVEL B
*EXMNR
*QVAL 1.0
*SEC 1/1
*SUBSORT memory
*KA 295031K103
*QUESTION
In an ATWS condition, reactor power DECREASES as RPV level is lowered because:

a. it reduces core flow causing increased void fraction.

b. moderator density inside and outside the core shroud equalizes, which equally distributes voiding throughout the core.

c. reducing RPV water level below the feedwater sparger ~~increases~~ decreases feedwater heating, which ~~increases~~ decreases moderator temperature, adding ~~negative~~ positive reactivity to the core. ← not used - bm

d. reducing RPV water level below the steam dryer seal skirt equalizes pressure inside and outside of the core shroud, collapsing the voids.

*ANSWER
a.
*REFERENCE
Clinton EOP Technical Bases, EOP-1A, ATWS RPV CONTROL
Clinton EQB - QNUM 14341 (QDATE 1990/01/15)
Perry EQB - QNUM 20612
Modified
Level of Difficulty (1 - 5): 3

*QNUM 600050
*HNUM
*ANUM
*QCHANGED FALSE
*ACHANGED FALSE
*QDATE 2000/06/05
*FAC 461
*RTYP BWR-GE6
*EXLEVEL B
*EXMNR
*QVAL 1.0
*SEC 1/1
*SUBSORT memory
*KA 295031K305
*QUESTION
Which of the following describes why EOP-1, RPV Control, Level branch, directs the operators to WAIT until reactor water level drops to the top of active fuel prior to blowdown?

a. Waiting until TAF minimizes the thermal and mechanical stress on the SRVs.

b. Above TAF, blowdown will cause excessive RPV level swell.

c. Waiting until TAF provides additional time to ~~maximize suppression pool cooling.~~ restore RPV water level.

d. Below TAF, core cooling by submergence can no longer be ensured.

*ANSWER
c ~~d~~
*REFERENCE
Clinton EOP Technical Bases, EOP-1, Pgs 27 - 29
New
Level of Difficulty (1 - 5): 3

d. is why we blowdown, not why we wait to blowdown.
changing c. provides a correct answer

*QNUM 600051
*HNUM
*ANUM
*QCHANGED FALSE
*ACHANGED FALSE
*QDATE 2000/06/05
*FAC 461
*RTYP BWR-GE6
*EXLEVEL B
*EXMNR
*QVAL 1.0
*SEC ½
*SUBSORT memory
*KA 295033A106
*QUESTION
The New Fuel Storage Vault digital Area Radiation Monitor (ARM), 1RIX-AR019, malfunctioned and a portable digital ARM was installed in the same general area as the 1RIX-AR019. During rounds, an Area Operator noticed that a BLUE rotating beacon was energized on the portable digital ARM. The BLUE rotating beacon indicates a/an:

a. detector failure

b. trend alarm

c. alert alarm

d. high alarm

*ANSWER
a.
*REFERENCE
LP85273-02, Area and Process Radiation Monitoring, Student Hndbk, Pgs 23-27 and 70-71.
Direct (Clinton Exam Bank; Question # 08006, (slightly modified))
Level of Difficulty (1 - 5): 2

*QNUM 600052
*HNUM
*ANUM
*QCHANGED FALSE
*ACHANGED FALSE
*QDATE 2000/06/05
*FAC 461
*RTYP BWR-GE6
*EXLEVEL B
*EXMNR
*QVAL 1.0
*SEC ½
*SUBSORT higher
*KA 295034K203
*QUESTION
A valid Secondary Containment Ventilation Isolation signal, Fuel Building Exhaust High Radiation, was received. WHAT is the correct response for the systems listed below?

	Continuous Containment Purge (CCP)	Containment Building Ventilation (VR/VQ)	Standby Gas Treatment System (VQ)
a.	Not Affected	Not Affected	Auto Initiate
b.	Tripped/Isolated	Tripped/Isolated	Not Affected
c.	Not Affected	Tripped/Isolated	Auto Initiate
d.	Tripped/Isolated	Not Affected	Not Affected

*ANSWER
c. a.
*REFERENCE
LP85261, Standby Gas Treatment System, Student Handbook, Summary
Direct (Question # 95, Clinton RO Exam, 2/98)
Level of Difficulty (1 - 5): 2

*QNUM 600053
*HNUM
*ANUM
*QCHANGED FALSE
*ACHANGED FALSE
*QDATE 2000/06/05
*FAC 461
*RTYP BWR-GE6
*EXLEVEL B
*EXMNR
*QVAL 1.0
*SEC 1/1
*SUBSORT memory
*KA 295037K307
*QUESTION
EOP-1A, ATWS RPV Control, directs operators to initiate Alternate Rod Insertion (ARI) using the ARI manual push buttons during an ATWS condition. The ARI push buttons provide an alternate means to:

a. de-energize the scram solenoid valves.

b. actuate the ATWS-RPT (trip the recirculation pump motor breakers).

c. vent the scram air header.

d. energize the the back-up scram solenoid valves.

*ANSWER
c.
*REFERENCE
LP 87212-01, Reactor Protection System, Student Handbook,
Section 1.1.1, pg. 9 of 32
Section 2.1.2.2 & 2.1.4, pgs 12 & 13 of 32
Modified (Clinton Exam Bank Q # 06730)
Level of Difficulty (1 - 5): 3

*QNUM 600054
*HNUM
*ANUM
*QCHANGED FALSE
*ACHANGED FALSE
*QDATE 2000/06/05
*FAC 461
*RTYP BWR-GE6
*EXLEVEL B
*EXMNR
*QVAL 1.0
*SEC ½
*SUBSORT memory
*KA 295038K102
*QUESTION
In EOP-9, "Radioactive Release Control," the operators are directed to restart Turbine Building Ventilation if it was shutdown. Restarting Turbine Building Ventilation will:

a. ensure Turbine Building air is filtered prior to release to the environment.

b. ensure Turbine Building air is monitored prior to release to the environment.

c. allow an alternate lineup for the Standby Gas Treatment System (VG) to take a suction from the Turbine Building.

d. allow an alternate lineup for the Turbine Building Ventilation system to take a suction from Secondary containment.

*ANSWER
b.
*REFERENCE
Clinton EOP Technical Basis, EOP-9, pg. 11-4
New (Similar to Grand Gulf EQB QNUM 31913)
Level of Difficulty (1 - 5): 3

*QNUM 600055
*HNUM
*ANUM
*QCHANGED FALSE
*ACHANGED FALSE
*QDATE 2000/06/05
*FAC 461
*RTYP BWR-GE6
*EXLEVEL B
*EXMNR
*QVAL 1.0
*SEC 2/2
*SUBSORT higher
*KA 201003K407
*QUESTION

Control rod 28-29 began drifting out following withdrawal during a ~~deep/shallow~~ rod sequence exchange. The rod was inserted and hydraulically isolated at its HCU following repeated insert attempts, to prevent it from drifting out. However, the rod continues to drift out.

Based on the information provided above, the rod continues to drift out because:

a. the rod has a stuck collet assembly.

b. the rod has one blown scram pilot valve fuse.

c. CRD cooling water flow and pressure are too high.

d. the rod has a failed-open withdraw supply directional control valve.

*ANSWER
a.
*REFERENCE
CPS 3304.01, CONTROL ROD HYDRAULIC & CONTROL (RD), Section 8.3.5
Direct (Clinton Exam Bank Q # 06373)
Level of Difficulty (1 - 5): 3

*QNUM 600056
*HNUM
*ANUM
*QCHANGED FALSE
*ACHANGED FALSE
*QDATE 2000/06/05
*FAC 461
*RTYP BWR-GE6
*EXLEVEL B
*EXMNR
*QVAL 1.0
*SEC 2/1
*SUBSORT memory
*KA 201005A301
*QUESTION Cap
When no rod is selected on the Rod Interface Display Module (RIDM) on P680, the LPRM string that is automatically selected is:

a. adjacent to the last selected rod

b. adjacent to the highest worth rod

c. the highest reading LPRM string

d. the LPRM string with the most detectors bypassed

*ANSWER
a.
*REFERENCE
LP87401-02, Rod Control & Information System, Student Handbook, pg. 11-41.
New
Level of Difficulty (1 - 5): 2

*QNUM 600057
*HNUM
*ANUM
*QCHANGED FALSE
*ACHANGED FALSE
*QDATE 2000/06/05
*FAC 461
*RTYP BWR-GE6
*EXLEVEL B
*EXMNR
*QVAL 1.0
*SEC 2/2
*SUBSORT memory
*KA 202001 2.1.33
*QUESTION
Recirculation loop flow mismatch shall be maintained within:

a. 5% of rated recirculation flow if core flow is less than 70% of rated core flow.

b. 5% of rated recirculation flow if core flow is greater than 70% of rated core flow.

c. 10% of rated recirculation flow if core flow is greater than 70% of rated core flow.

d. 15% of rated recirculation flow if core flow is less than 60% of rated core flow.

*ANSWER
b.
*REFERENCE
TS 3.4.1
New
Level of Difficulty (1 - 5): 2

*QNUM 600058
*HNUM
*ANUM
*QCHANGED FALSE
*ACHANGED FALSE
*QDATE 2000/06/05
*FAC 461
*RTYP BWR-GE6
*EXLEVEL B
*EXMNR
*QVAL 1.0
*SEC 2/1
*SUBSORT higher
*KA 202002A208
*QUESTION
Given the following conditions:

- The reactor was at 100% RTP.
- Turbine driven reactor feedwater pump "A" tripped.
- RPV level decreased to +25 inches.

Due to a recirculation flow control valve (FCV) malfunction, both FCVs stopped moving at 40% full open. Assuming no operator action, after the FCVS stop moving,

~~a.~~ b RPV level will continue to decrease.

~~b.~~ a RPV level will recover to 36 inches.

~~c.~~ d. the plant will be in the Restricted Zone of the ~~Stability Control~~ Power to Flow Map.

~~d.~~ c. both recirculation pumps automatically ~~downshift to slow speed.~~ Trip off could be 2ND correct answer.

*ANSWER
a.
*REFERENCE
LO 87402-01, RR Flow Control System, Student Handbook, pgs. 7/21 & 13/21.
New
Level of Difficulty (1 - 5): 3

*QNUM 600059
*HNUM
*ANUM
*QCHANGED FALSE
*ACHANGED FALSE
*QDATE 2000/06/05
*FAC 461
*RTYP BWR-GE6
*EXLEVEL B
*EXMNR
*QVAL 1.0
*SEC 2/1
*SUBSORT higher
*KA 203000A309
*QUESTION
Given the following conditions:

- A large recirculation pipe break occurred in the drywell.
- A loss of offsite power occurred at the same time.
- The EDGs responded correctly and connected to their respective buses.

Which of the following describes the response of the RHR pumps without any operator action?

a. Each pump starts immediately

b. Each pump starts after a 5 seconds delay

c. RHR A & B pumps start immediately, RHR C pump starts after a 5 second delay.

d. RHR C pump starts immediately, RHR A & B pumps start after a 5 second delay.

*ANSWER
d.
*REFERENCE
LP85205, Residual Heat Removal, Student Handbook, pg. 42 & 43 of 47.
Direct (Clinton Exam Bank Q # 06565)
Level of Difficulty (1 - 5): 3

*QNUM 600060
*HNUM
*ANUM
*QCHANGED FALSE
*ACHANGED FALSE
*QDATE 2000/06/05
*FAC 461
*RTYP BWR-GE6
*EXLEVEL B
*EXMNR
*QVAL 1.0
*SEC 2/2
*SUBSORT memory
*KA 204000A210
*QUESTION
The plant is at 100% RTP and the reactor water cleanup system (RWCU) is in service. If the operator inadvertently depressed the control switch for the RWCU Suction Outboard Isolation valve, G33-F004, when will the RWCU pumps trip? They will trip as soon as:

a. valve F004 leaves its fully open position.

b. valve F004 reaches its fully closed position.

c. system flow decreases to < 70 gpm.

d. the 5 second low flow time delay has timed out.

*ANSWER
a.
*REFERENCE
LP85204-07, Reactor Water Cleanup System, Student Handbook, pg. 12/31.
Modified (Clinton Exam Bank Q # 06566)
Level of Difficulty (1 - 5): 2

*QNUM 600061
*HNUM
*ANUM
*QCHANGED FALSE
*ACHANGED FALSE
*QDATE 2000/06/05
*FAC 461
*RTYP BWR-GE6
*EXLEVEL B
*EXMNR
*QVAL 1.0
*SEC 2/2
*SUBSORT higher
*KA 295021A203
*QUESTION
Given the following conditions:

- The plant was operating in Mode 4 with a reactor coolant temperature of 180 deg. F.
- The "A" loop of RHR was operating in Shutdown Cooling (SDC) from the Remote Shutdown Panel.
- RPV Level decreased to + 5 inches, Shutdown Range.

In order to assure adequate core coverage, the SDC Suction Isolation valves, F008 & F009 . . .

a. automatically close and the RHR-A pump automatically trips.

b. automatically close and the RHR-A pump must be manually tripped.

c. must be manually closed and the RHR-A pump automatically trips.

d. must be manually closed and the RHR-A pump must be manually tripped.

*ANSWER
d.
*REFERENCE
LP85205-04, Residual Heat Removal, Student Handbook
CPS 4003.01008, RSP-Div 1 Shutdown Cooling Operation.
Modified (Clinton SRO Exam 2/98, Q # 45)
Level of Difficulty (1 - 5): 2

*QNUM 600062
*HNUM
*ANUM
*QCHANGED FALSE
*ACHANGED FALSE
*QDATE 2000/06/05
*FAC 461
*RTYP BWR-GE6
*EXLEVEL B
*EXMNR
*QVAL 1.0
*SEC 2/1
*SUBSORT higher
*KA 209001K408
*QUESTION
Given the following conditions:

- The plant was operating at 60% RTP.
- A Low Pressure Core Spray System (LPCS) Full Flow Test was in progress.
- An event occurred and drywell pressure increased to 2.0 psig.

Following the event:

- RPV water level was at 50 inches (NR) and steady
- RPV pressure was 975 psig and steady.
- Drywell pressure was 2.3 psig and steady.

WHICH of the following describes the status of the Low Pressure Core Spray system?

a. The LPCS pump should have tripped.

b. LPCS remained in the Full Flow Test mode.

c. LPCS realigned and is injecting into the vessel.

d. LPCS realigned and is pumping water into the suppression pool via the min flow line.

*ANSWER
d.
*REFERENCE
LP 85209, Low Pressure Core Spray, Student Handbook, pgs. 13 - 16 of 27.
Direct (Clinton Exam Bank Q # 20996) CLINTON 2/98 RO EXAM. QUESTION # 22
Level of Difficulty (1 - 5): 2

*QNUM 600063
*HNUM
*ANUM
*QCHANGED FALSE
*ACHANGED FALSE
*QDATE 2000/06/05
*FAC 461
*RTYP BWR-GE6
*EXLEVEL B
*EXMNR
*QVAL 1.0
*SEC 2/1
*SUBSORT higher
*KA 209002K602
*QUESTION
Given the following conditions:

- The High Pressure Core Spray (HPCS) system was running in RCIC Storage Tank to RCIC Storage Tank (tank-to-tank) mode.
- During the test, the RCIC storage tank level instruments failed low.

Assuming no operator action, which of the following describes the status of the high pressure core spray system?

a. The HPCS pump will trip because the suppression pool suction valve (F015) and the RCIC storage tank valve (F001) will both be open at the same time.

b. The HPCS 1st and 2nd test valves (F010 & F011) to storage tank both close as the suppression pool suction valve (F015) begins to open.

c. The HPCS pump will continue to operate in the tank-to-tank mode. Auto swap-over of the suction is prohibited when the MOV TEST PREP switch is in the TEST position.

d. The suppression pool suction isolation valve (F015) opens and the RCIC storage tank isolation valve (F001) shuts. HPCS pumps from the suppression pool to the RCIC storage tank until manually realigned to the suppression pool or the reactor.

*ANSWER
b.
*REFERENCE
LP85380-03, High Pressure Core Spray, Student Handbook, pgs. 17, 18, 23, & 26 of 29.
New (Grand Gulf EQB QNUM 31869)
Level of Difficulty (1 - 5): 3

*QNUM 600064
*HNUM
*ANUM
*QCHANGED FALSE
*ACHANGED FALSE
*QDATE 2000/06/05
*FAC 461
*RTYP BWR-GE6
*EXLEVEL B
*EXMNR
*QVAL 1.0
*SEC 2/1
*SUBSORT higher
*KA 211000A109
*QUESTION
~~You have been directed to initiate the "A" train of Standby Liquid Control (SLC) system. You turn the keylock switch for the SLC Pump "A" to RUN and observe the white continuity lamp for the "A" squib valve go out.~~ Besides an RWCU system isolation, what additional automatic action occurs when SLC "A" is initiated?

a. The mixing heater for the SLC storage tank de-energizes.

b. The SLC test tank outlet valve receives a close signal.

c. The white continuity lamp for the "B" squib valve goes out.

d. The SLC storage tank outlet valve "A" receives an open signal.

*ANSWER
d.
*REFERENCE
LP85211-03, Standby Liquid Control System, Student Handbook, pgs. 18 & 19.
Modified (Clinton Exam Bank Q # 03008)
Level of Difficulty (1 - 5): 2

*QNUM 600065
*HNUM
*ANUM
*QCHANGED FALSE
*ACHANGED FALSE
*QDATE 2000/06/05
*FAC 461
*RTYP BWR-GE6
*EXLEVEL B
*EXMNR
*QVAL 1.0
*SEC 2/1
*SUBSORT memory
*KA 212000K401
*QUESTION
Which of the following describes how the Backup Scram Valves scram the reactor?

The Backup Scram Valves:

a. provide an alternate flowpath from the HCU accumulator to the CRDM and from the CRDM to the SDV.

b. isolate and vent the air supply for each scram inlet and outlet valve on each individual HCU.

c. de-energize and reposition the scram pilot solenoid valves on the HCUs

d. isolate instrument air from the scram air header and vent the scram air header.

*ANSWER
d.
*REFERENCE
LP 87212, Reactor Protection System, Student Handbook, pg. 15 of 32
Modified (Clinton Exam Bank Q # 06731)
Level of Difficulty (1 - 5): 2

*QNUM 600066
*HNUM
*ANUM
*QCHANGED FALSE
*ACHANGED FALSE
*QDATE 2000/06/05
*FAC 461
*RTYP BWR-GE6
*EXLEVEL B
*EXMNR
*QVAL 1.0
*SEC 2/1
*SUBSORT higher
*KA 215004K401
*QUESTION
Given the following conditions:

- A reactor startup is in progress.
- SRM A 110 counts/second
- SRM B 120 counts/second
- SRM C 105 counts/second
- SRM D 115 counts/second
- IRMs A and D Range 2
- All other IRMs Range 3
- The SRM detectors are being withdrawn.

As the SRMs are being withdrawn, SRM A output fails to zero (0) counts. Which of the following describes the results of SRM A output failing to zero counts?

	Rod Withdraw Block	RPS Trip Signal
a.	Y	N
b.	N	Y
c.	Y	Y
d.	N	N

*ANSWER
a.
*REFERENCE
LP85212-02, Source Range Monitoring System, Student Handbook, pgs. 34 - 37 & 45.
Direct (Clinton Exam Bank Q # 21041)
Level of Difficulty (1 - 5): 3

*QNUM 600067
*HNUM
*ANUM
*QCHANGED FALSE
*ACHANGED FALSE
*QDATE 2000/06/05
*FAC 461
*RTYP BWR-GE6
*EXLEVEL B
*EXMNR
*QVAL 1.0
*SEC 2/1
*SUBSORT higher
*KA 216000A207
*QUESTION
A small break LOCA inside the Drywell has caused a WIDE range RPV level instrument reference leg to reach saturation temperature.

The indicated level for this instrument will . . .

a. not change if actual level remains constant.

b. trend down even though actual level remains constant.

c. trend up even though actual level remains constant.

d. not change if actual level begins to change.

*ANSWER
c.
*REFERENCE
CPS 4411.07, RPV LEVEL INSTRUMENTATION
New (Grand Gulf EQB - QNUM 29839)
Level of Difficulty (1 - 5): 3

*QNUM	600068
*HNUM	
*ANUM	
*QCHANGED	FALSE
*ACHANGED	FALSE
*QDATE	2000/06/05
*FAC	461
*RTYP	BWR-GE6
*EXLEVEL	B
*EXMNR	
*QVAL	1.0
*SEC	2/1
*SUBSORT	higher
*KA	217000 2.1.31

*QUESTION

The Reactor Core Isolation Cooling (RCIC) system was operating for a full flow test when a RCIC Turbine trip occurred. Which one of the following describes the position indication in the Main Control Room for the RCIC Turbine Trip-Throttle Valve (TTV), C002, prior to resetting the turbine trip?

	Turbine Trip Valve Stem	Turbine Trip Valve Operator
a.	Open	Open
b.	Open	Closed
c.	Closed	Open
d.	Closed	Closed

*ANSWER

c.

*REFERENCE

LP85217-02, Reactor Core Isolation Cooling System, Student Handbook, pgs. 28 - 29/61.
Direct (Clinton Exam Bank Q # 06586)
Level of Difficulty (1 - 5): 2

*QNUM 600069
*HNUM
*ANUM
*QCHANGED FALSE
*ACHANGED FALSE
*QDATE 2000/06/05
*FAC 461
*RTYP BWR-GE6
*EXLEVEL B
*EXMNR
*QVAL 1.0
*SEC 2/1
*SUBSORT memory
*KA 218000K201
*QUESTION
Given the following conditions:

- Division I 125 VDC was de-energized and is unavailable.
- All other equipment was available and in its normal lineup.
- An event occurred which required the manual initiation of ADS.

If the A & E ADS "arm and depress" pushbuttons are used, the ADS valves will ____(1)____.
If the B & F ADS "arm and depress" pushbuttons are used, the ADS valves will ____(2)____.

	(1)	(2)
a.	Open	Open
b.	Open	Not Open
c.	Not Open	Open
d.	Not Open	Not Open

*ANSWER
c.
*REFERENCE
LP87218-01, Engineered Safety Systems Actuation System, Student Handbook, pg. 39
LP 85239, Main Steam System, Student Handbook, pgs. 25 & 55.
Direct (Clinton Exam Bank Q # 21125)
Level of Difficulty (1 - 5): 2

*QNUM 600070
*HNUM
*ANUM
*QCHANGED FALSE
*ACHANGED FALSE
*QDATE 2000/06/05
*FAC 461
*RTYP BWR-GE6
*EXLEVEL B
*EXMNR
*QVAL 1.0
*SEC 2/1
*SUBSORT higher
*KA 223001K501
*QUESTION
Given the following conditions

- A reactor startup is in progress.
- Containment and drywell ventilation systems are operating normally.
- Drywell pressure is slowly increasing.

A decision is made to "Burp" the drywell in accordance with CPS 3316.01, Combustible Gas Control System. If containment pressure exceeds drywell pressure during this evolution, the pressures are equalized by:

a. the operation of the Drywell Vacuum Relief valves

b. backflow through the Drywell Purge Isolation valves

c. backflow through the Containment Exhaust Purge valves

d. the operation of Containment Building Supply Modulating Damper,

*ANSWER
a.
*REFERENCE
LP85455-02, Containment Ventilation and Drywell Purge System, Student Hndbk, pgs.20 - 23.
LP85405-02, Combustible Gas Control System, Student Handbook, pg. 16
New
Level of Difficulty (1 - 5): 2

*QNUM 600071
*HNUM
*ANUM
*QCHANGED FALSE
*ACHANGED FALSE
*QDATE 2000/06/05
*FAC 461
*RTYP BWR-GE6
*EXLEVEL R
*EXMNR
*QVAL 1.0
*SEC 2/1
*SUBSORT higher
*KA 223002K102
*QUESTION
Given the following conditions:

- The reactor was operating at 100% RTP.
- The Main Steam Line (MSL) Tunnel high temperature alarm actuated.
- MSL Tunnel temperature continues to increase.

Based on MSL temperature ALONE and WITHOUT operator action, ____(1)____ will isolate immediately and ____(2)____ will isolate after 25 minutes.

	(1)	(2)
a.	RWCU	RCIC
b.	RCIC	RWCU
c.	RWCU	Main Steam
d.	Main Steam	RWCU

*ANSWER
a.
*REFERENCE
LP87407-01, CRVICS, Student Hndbk, pgs. 22, 25, 53, 58, 59, 61, & 62.
New
Level of Difficulty (1 - 5): 2

*QNUM 600072
*HNUM
*ANUM
*QCHANGED FALSE
*ACHANGED FALSE
*QDATE 2000/06/05
*FAC 461
*RTYP BWR-GE6
*EXLEVEL B
*EXMNR
*QVAL 1.0
*SEC 2/2
*SUBSORT higher
*KA 226001A105
*QUESTION
Given the following conditions:

At 10:00:~~00~~ a.m., the plant was operating normally at 100% RTP when ~~an event~~ LOCA occurred. ~~RPV level decreased to Level 1 and~~ All systems operated as designed. Three and one-half (3.5) minutes later, the following conditions existed:

- RPV level was -150 inches decreasing.
- Drywell pressure was 1.96 psig increasing.
- Containment pressure was 7.9 psig increasing.

Assuming NO OPERATOR ACTION and no change in the trends of the parameters provided above, the B Containment Spray loop will actuate at approximately:

a. ~~in 6 minutes 30 seconds~~ 10:06am

b. ~~in 8 minutes 10 seconds~~ 10:08 am

c. ~~in 10 minutes 10 seconds~~ 10:10am

d. ~~in 11 minutes 30 seconds~~ 10:12 am

*ANSWER
~~b.~~ d.
*REFERENCE
LP85205-04, Residual Heat Removal System, Student Handbook, pg. 32/47.
Modified (Clinton EQB QNUM 18839)
Level of Difficulty (1 - 5): 4

*QNUM 600073
*HNUM 20744
*ANUM 20573
*QCHANGED FALSE
*ACHANGED FALSE
*QDATE 2000/06/05
*FAC 461
*RTYP BWR-GE6
*EXLEVEL B
*EXMNR BANK
*QVAL 1.0
*SEC 2/3
*SUBSORT higher
*KA 234000A103
*QUESTION
Core load is in progress. You are in the process of relieving the reactor operator responsible for refuel operations. Refuel operations are on hold for control room shift change. During your review of the Fuel Movement Checklist you made the following SRM observations:

After loading 348 bundles - SRM counts are 31
After loading 448 bundles - SRM counts are 62
After loading 548 bundles - SRM counts are 125
After loading 648 bundles - SRM counts are 250

You should:

a. Scram the reactor and contact a Qualified Reactor Engineer.

b. Evacuate the refuel floor of all non health-physics personnel.

c. Place recirculation loop A & B flow controls in manual and reduce recirculation flow to less than 6700 gpm.

d. Insert all insertable control rods, and contact a Qualified Reactor Engineer.

*ANSWER
d.
*REFERENCE
CPS No. 7105.12 Conduct of Refueling Activities not provided
VALIDATE AT THE SITE
New
Level of Difficulty (1 - 5): 3

~~Replace - no procedures for this Q.~~
Reworked - Found T.S. reference

*QNUM 600074
*HNUM
*ANUM
*QCHANGED FALSE
*ACHANGED FALSE
*QDATE 2000/06/05
*FAC 461
*RTYP BWR-GE6
*EXLEVEL B
*EXMNR
*QVAL 1.0
*SEC 2/2
*SUBSORT memory
*KA 239001K201
*QUESTION
Given the following conditions:

Non-Divisional NSPS Solenoid (RPS) Power Distribution

- ~~A plant~~ startup is in progress.
- OK The MSIVs are closed.
- ~~Panel~~ "A" ~~of the~~ ~~NSPS 120 VAC Solenoid Power Distribution~~ has tripped and is de-energized.

RPS ~~120VAC~~

Based on the conditions provided above, from the main control room the inboard MSIVs . . .

a. can NOT be opened, the outboard MSIVs can be opened.

b. can be opened, the outboard MSIVs can NOT be opened.

c. and the outboard MSIVs can be opened.

d. and the outboard MSIVs can NOT be opened.

*ANSWER
c.
*REFERENCE
LP85239-04, Main Steam System, Student Handbook, pg 24/42.
Modified (Clinton Exam Bank Q #07334)
Level of Difficulty (1 - 5): 2

*QNUM 600075
*HNUM
*ANUM
*QCHANGED FALSE
*ACHANGED FALSE
*QDATE 2000/06/05
*FAC 461
*RTYP BWR-GE6
*EXLEVEL B
*EXMNR
*QVAL 1.0
*SEC 2/1
*SUBSORT higher
*KA 241000K616
*QUESTION
Given the following plant conditions:

- The plant was operating at 85%.
- A malfunction occurred which resulted in a loss of Plant Service Water (WS) to the Turbine Building.

Assuming no operator action, the response of the Turbine Control Valve (TCV), the Bypass Valves (BPV), and reactor (Rx) pressure is:

a. TCVs remains as is, BPVs remain closed, Rx pressure decreases and stabilizes.

b. TCVs throttle closed, BPVs remain closed, Rx pressure increases and stabilizes.

c. TCVs remains as is, BPVs throttle to full open, Rx pressure decreases until the MSIVs close.

d. TCVs throttle closed, BPVs throttle to full open, Rx pressure increases until a scram occurs.

*ANSWER
d.
*REFERENCE
LP85253-02,Generator Stator Cooling System, Student Handbook, pgs. 23 - 25, 28 - 29.
Annunciator Response Procedure CPS 5200-3A, Generator Protection Circuit Energized.
Modified (Clinton Exam Bank Q # 07263)
Level of Difficulty (1 - 5): 4

*QNUM 600076
*HNUM
*ANUM
*QCHANGED FALSE
*ACHANGED FALSE
*QDATE 2000/06/05
*FAC 461
*RTYP BWR-GE6
*EXLEVEL B
*EXMNR
*QVAL 1.0
*SEC 2/2
*SUBSORT memory
*KA 245000K610
*QUESTION
Given the following conditions:

- The plant is operating at 100% RTP.
- The main turbine Main Shaft Oil Pump (MSOP) discharge pressure is slowly decreasing.
- All control switches are in AUTO.

As MSOP pressure slowly decreases from normal operating pressure, choose the order that the Main Turbine Lube Oil System pumps automatically start. (assume no operator actions)

a. Motor Suction Pump, Emergency Bearing Oil Pump, Turning Gear Oil Pump.

b. Turning Gear Oil Pump, Motor Suction Pump, Emergency Bearing Oil Pump.

c. Emergency Bearing Oil Pump, Turning Gear Oil Pump, Motor Suction Pump.

d. Turning Gear Oil Pump, Emergency Bearing Oil Pump, Motor Suction Pump.

*ANSWER
d.
*REFERENCE
LP85247-02, Turbine Oil System, Student Handbook, pg. 34/48.
Annunciator Window 5017-6A, Auto Start Turb Auxiliary Pump/Motor.
New (Remotely related to Clinton Exam Bank Q # 03682)
Level of Difficulty (1 - 5): 3

*QNUM	600077
*HNUM	
*ANUM	
*QCHANGED	FALSE
*ACHANGED	FALSE
*QDATE	2000/06/05
*FAC	461
*RTYP	BWR-GE6
*EXLEVEL	B
*EXMNR	
*QVAL	1.0
*SEC	2/1
*SUBSORT	memory
*KA	259001A202

*QUESTION

The plant was operating at 100% RTP when a transient occurred that resulted in the isolation of the MSRs and the 6B FW Heater. In accordance with Off Normal Procedure, CPS 4005.01, "Loss of Feedwater Heating," you IMMEDIATELY:

a. manually scram the reactor and enter procedure CPS 4100.01, Reactor Scram.

b. insert the CRAM ARRAYS until clear of the Restricted Zone on the Stability Control Map.

c. downshift recirculation pumps and take local control of MSR and feedwater heaters.

d. reduce power by reducing recirculation flow.

*ANSWER

d.

*REFERENCE

Off Normal Procedure, 4005.01, "Loss of Feedwater Heating," Revision 14, Section 3.0

Direct (Clinton SRO Exam 2/98, Q # 86)

Level of Difficulty (1 - 5): 3

*QNUM 600078
*HNUM
*ANUM
*QCHANGED FALSE
*ACHANGED FALSE
*QDATE 2000/06/05
*FAC 461
*RTYP BWR-GE6
*EXLEVEL B
*EXMNR
*QVAL 1.0
*SEC 2/1
*SUBSORT memory
*KA 259002A306
*QUESTION
The plant was operating at 100% when an inadvertent scram occurred during scram discharge volume water level testing. Setpoint setdown logic . . .

a. is directly initiated by the scram signal.

b. is directly initiated when RPV level goes below Level 3.

c. can be reset manually when the scram signal is reset.

d. resets automatically when RPV level goes above Level 3.

*ANSWER
b.
*REFERENCE
LP87570-01, Feedwater Control System, Student Handbook, pg. 49.
CPS 3103.01, Feedwater, Section 8.3.2
Modified (Clinton Exam Bank Q # 06226)
Level of Difficulty (1 - 5): 2

*QNUM 600079
*HNUM
*ANUM
*QCHANGED FALSE
*ACHANGED FALSE
*QDATE 2000/06/05
*FAC 461
*RTYP BWR-GE6
*EXLEVEL B
*EXMNR
*QVAL 1.0
*SEC 2/1
*SUBSORT higher
*KA 261000K401
*QUESTION
Given the following conditions:

- The plant was operating at 100% RTP.
- A feedwater transient occurred that resulted in RPV water level lowering to -50 inches.
- The reactor scrammed and all systems responded as designed to the transient.
- Control of RPV level has been restored and level is currently -15 inches and increasing.

As part of the recovery actions, the CRVICS Inboard & Outboard Isolation Seal-in reset buttons were ~~have been~~ depressed ~~for the Standby Gas Treatment System "A" (SGTS-A).~~ No action ~~has~~ have been taken ~~on the SGTS~~-B. Based on the conditions provided above, the SGTS-A ~~will:~~

a. will automatically restart if flow in the SGTS-B lowers to 3500 cfm.

b. will automatically restart if Drywell pressure increases to 1.68 psig.

c. must be shutdown manually ~~NOT reset until the SGTS-A~~ Exhaust Fan is stopped.

d. will ~~shutdown automatically~~ remain in standby ~~NOT reset until RPV level is above Level 2~~

*ANSWER
c.
*REFERENCE
LP85261-02, A-Standby Gas Treatment System, Student Handbook, pgs 21 - 23.
Modified (Clinton Exam Bank Q # 21106)
Level of Difficulty (1 - 5): 3

*QNUM	600080
*HNUM	
*ANUM	
*QCHANGED	FALSE
*ACHANGED	FALSE
*QDATE	2000/06/05
*FAC	461
*RTYP	BWR-GE6
*EXLEVEL	B
*EXMNR	
*QVAL	1.0
*SEC	2/2
*SUBSORT	higher
*KA	262001K602

*QUESTION

Given the following conditions:

- The plant is operating at 100% RTP.
- The 138Kv transmission line is out of service for trouble shooting.

Given the conditions above, AND a loss of voltage to Bus 1A1, the electrical power source to Bus 1A1 will automatically be transferred to the:

a. Unit Auxiliary Transformer (UAT).

b. Emergency Diesel Generator (EDG).

c. Reserve Auxiliary Transformer (RAT).

d. Emergency Reserve Auxiliary Transformer (ERAT).

*ANSWER

b.

*REFERENCE

CPS 42001.01, Loss of AC Power, Section 2.1.

Modified (Clinton EQB QNUM 19018 & QNUM 19004)

Level of Difficulty (1 - 5): 2

*QNUM 600081
*HNUM
*ANUM
*QCHANGED FALSE
*ACHANGED FALSE
*QDATE 2000/06/05
*FAC 461
*RTYP BWR-GE6
*EXLEVEL B
*EXMNR
*QVAL 1.0
*SEC 2/2
*SUBSORT higher
*KA 262002A401
*QUESTION
Given the following conditions for the 1A Uninterruptible Power Supply (UPS):

- The UPS 1A loads are being supplied from 480 VAC power.
- The Manual Bypass Switch is in the ALTERNATE SOURCE TO LOAD position.
- The Auto Retransfer Switch is in the OFF position.
- The inverter is operating at normal voltages.

If the Auto Retransfer Switch is taken to the ON position, the power supply for the UPS 1A loads:

a. will automatically transfer to the inverter through the Solid State Transfer Switch (Static Transfer Switch).

b. can be manually transferred to the inverter by depressing the INVERTER TO LOAD pushbutton.

c. will automatically transfer to the inverter when the Manual Bypass Switch is moved to the NORMAL TO LOAD position.

d. can be manually transferred to the inverter when the Manual Bypass Switch is moved to the TEST position.

*ANSWER
c.
*REFERENCE
LP85576-01, Uninterruptible Power Supply System, Student Handbook, pgs. 6/9 & 7/9.
Modified (Clinton Exam Bank Q # 21002)
Level of Difficulty (1 - 5): 4

*QNUM 600082
*HNUM
*ANUM
*QCHANGED FALSE
*ACHANGED FALSE
*QDATE 2000/06/05
*FAC 461
*RTYP BWR-GE6
*EXLEVEL B
*EXMNR
*QVAL 1.0
*SEC 2/1
*SUBSORT memory
*KA 264000A404
*QUESTION
The Division 1 Emergency Diesel Generator (EDG) was started from the control room and is running in parallel with its associated bus for testing. If an aux operator depressed the local Emergency Stop pushbutton, the EDG would . . .

a. continue to run. The local Emergency Stop pushbutton is not in the control circuit unless the EDG was started locally.

b. continue to run. The local Emergency Stop pushbutton is not in the control circuit unless a LOCA or LOOP signal started the EDG.

c. immediately trip. The fuel racks are tripped and the air intake damper is shut.

d. immediately trip. The EDG exciter field and the DG lockout (86) relays will trip.

*ANSWER
d.
*REFERENCE
LP85264-02, Diesel Generator/Diesel Fuel Oil System, Student Handbook, pg. 73.
Modified (Clinton Exam Bank Q # 08939)
Level of Difficulty (1 - 5): 2

*QNUM 600083
*HNUM
*ANUM
*QCHANGED FALSE
*ACHANGED FALSE
*QDATE 2000/06/05
*FAC 461
*RTYP BWR-GE6
*EXLEVEL B
*EXMNR
*QVAL 1.0
*SEC 2/2
*SUBSORT higher
*KA 272000A212
*QUESTION
The plant was in a refueling outage when the Refueling Platform Area Radiation Monitor (ARM) alarmed during movement of a fuel bundle. All systems and controls operated as designed. What was the impact of the ARM alarm on fuel handling operations?

a. Raise and lower power to the Refueling Platform hoist were interrupted and the Radiation Monitor Bypass Switch must be in Bypass to lower the fuel bundle.

b. Raise power to the Refueling Platform hoist was interrupted and the Radiation Monitor Bypass Switch must be in Bypass to raise the fuel bundle.

c. Lower power to the Refueling Platform hoist was interrupted and the Radiation Monitor Bypass Switch must be in Bypass to lower the fuel bundle.

d. Raise and lower power to the Refueling Platform hoist were interrupted and the Radiation Monitor Bypass Switch must be in Bypass to raise the fuel bundle.

*ANSWER
b.
*REFERENCE
LP86614-03, Fuel Handling Equipment, Student Handbook, pgs. 65/117 - 67/117,
Modified (Clinton Exam Bank Q # 08174 & 08148)
Level of Difficulty (1 - 5): 3

*QNUM 600084
*HNUM
*ANUM
*QCHANGED FALSE
*ACHANGED FALSE
*QDATE 2000/06/05
*FAC 461
*RTYP BWR-GE6
*EXLEVEL B
*EXMNR BANK
*QVAL 1.0
*SEC 2/2
*SUBSORT higher
*KA 286000A301
*QUESTION

Which one of the following describes the response of the fire ~~water~~ protection system to an inadvertent actuation of the deluge system for the main transformer?

a. The fire ~~water~~ protection system header pressure will be adequately maintained by WS. No fire pumps will automatically start.

b. The "A" diesel fire pump will start immediately with the signal that initiated the deluge system. The "B" diesel fire pump will start if fire ~~water~~ protection system pressure decreases below 140 psig.

c. The "A" diesel fire pump will start if fire ~~water~~ protection system pressure decreases below 140 psig. If fire ~~water~~ protection system pressure continues to decrease below 130 psig, the "B" diesel fire pump will start.

d. Fire ~~water~~ protection system header pressure will decrease. The SX pumps will start and supply cooling to the SX system loads at 120 psig, allowing WS header pressure to recover fire ~~water~~ protection system header pressure. ~~If the fire header pressure does not recover and continues to decrease below 90 psig, both diesel fire water pumps will automatically start.~~

*ANSWER
~~d~~ C
*REFERENCE
CPS 3213.01
New
Level of Difficulty (1 - 5): 3

*QNUM 600085
*HNUM
*ANUM
*QCHANGED FALSE
*ACHANGED FALSE
*QDATE 2000/06/05
*FAC 461
*RTYP BWR-GE6
*EXLEVEL B
*EXMNR BANK
*QVAL 1.0
*SEC 2/2
*SUBSORT memory
*KA 290001A301
*QUESTION

A small instrument line leak has resulted in a main steam line tunnel temperature of ~~155~~ 160 deg F. Which of the following have isolated?

a. Main steam lines only

b. Residual heat removal system and main steam lines

c. Reactor water cleanup system and main steam lines

d. Residual heat removal system, reactor water cleanup system, and main steam lines

*ANSWER
c.
*REFERENCE
CPS No. 4001.02
New
Level of Difficulty (1 - 5): 2

*QNUM 600086
*HNUM
*ANUM
*QCHANGED FALSE
*ACHANGED FALSE
*QDATE 2000/06/05
*FAC 461
*RTYP BWR-GE6
*EXLEVEL B
*EXMNR BANK
*QVAL 1.0
*SEC 2/2
*SUBSORT higher
*KA 400000K301

Question as written requires an assumption on the part of the applicant to reach the correct answer. Reworked below

*QUESTION

The plant has been operating normally at ~~100%~~ 83% RTP for several weeks. ~~The "C" operator has just called you ("A" control room operator) and reported that something is wrong with the air control system for both CCW heat exchanger 1A & 1B temperature regulating valves, 1WS018A & B. The operator stated that the valves were shutting for no apparent reason and that CCW header temperature was 110 deg F and increasing. The operator stated he was unable to re-open the valves. You should:~~

a. move the mode switch to shutdown and trip both recirc pumps within one minute.

b. check the instrument air system lineup to ensure there is adequate air pressure to open the two valves.

c. have the operator place the valves in manual handwheel, remove the locking pin, and try to manually control the CCW outlet temperature at approximately 100 deg F.

d. have the operator quickly shut the Fuel Pool HX 1A(B) Inlet and Outlet Valves, 1CC075A(B) and 1CC076A(B), and establish SX System cooling of CCW loads.

*ANSWER
a.
*REFERENCE
SD-CC, Section 4.0, CPS No. 3203.01
New
Level of Difficulty (1 - 5): 2

If the CC system were to develop an unisolable leak, which exceeds the capacity of the CC ~~system~~ expansion tank makeup, you should immediately...

a. verify cooling water automatically transfers to the SX system.
b. stop the ~~SER~~ plant service air compressors within five minutes.
c. stop the FC system pumps within five minutes
d. stop the RR pumps within one minute.

*QNUM 600087
*HNUM
*ANUM
*QCHANGED FALSE
*ACHANGED FALSE
*QDATE 2000/06/05
*FAC 461
*RTYP BWR-GE6
*EXLEVEL R
*EXMNR
*QVAL 1.0
*SEC 3/
*SUBSORT memory
*KA 2.1.3
*QUESTION

"A"

While filling the position of "B" Reactor Operator, you request a short term relief. Under which of the following circumstances would a panel walkdown be required as part of your turnover to the operator providing the temporary relief?

a. The relief operator did not attend the shift briefing.

b. There have been changes in plant conditions or equipment status since the shift briefing.

c. Surveillance testing ~~or a plant evolution~~ is in progress.

d. Work is to be performed that may impact the watchstation during the relief period.

*ANSWER
a
*REFERENCE
CPS 1401.04, Shift Turnover and Relief, Section 8.8.2 (pg. 9/18)
New
Level of Difficulty (1 - 5): 3

"B" operator can leave w/o relief.

*QNUM 600088
*HNUM
*ANUM
*QCHANGED FALSE
*ACHANGED FALSE
*QDATE 2000/06/05
*FAC 461
*RTYP BWR-GE6
*EXLEVEL B
*EXMNR
*QVAL 1.0
*SEC 3
*SUBSORT memory
*KA 2.1.11
*QUESTION
Given the following conditions:

- The plant is in Mode 5 with fuel being moved from the RPV to the spent fuel pool using the Inclined Fuel Transfer System.
- The Division 1 Main Control Room HVAC subsystem is out of service for maintenance.
- The Division 2 Main Control Room HVAC subsystem is in service.

If a malfunction occurred and the Division 2 Main Control Room HVAC subsystem tripped, the TS required IMMEDIATE action is to:

a. start at least one train of Standby Gas.

b. stop immediately fuel movement in the Spent Fuel Pool.

c. verify primary and secondary containment are established.

d. verify Control Building pressure is negative compared to the outside.

*ANSWER
b.
*REFERENCE
Technical Specification 3.7.4
Modified (Clinton 2/98 RO Exam, Q # 2)
Level of Difficulty (1 - 5): 2

*QNUM 600089
*HNUM
*ANUM
*QCHANGED FALSE
*ACHANGED FALSE
*QDATE 2000/06/05
*FAC 461
*RTYP BWR-GE6
*EXLEVEL B
*EXMNR
*QVAL 1.0
*SEC 3
*SUBSORT memory
*KA 2.1.22
*QUESTION
The plant is nearing the end of a 6 day forced outage during which 5 control rod drives were replaced. Shutdown cooling has been secured and control rod time testing is about to be performed. The following plant conditions exist:

- Reactor Mode Switch position: REFUEL
- Reactor water temperature: 280 deg F
- Control rod position: All rods are full in
- Head Closure Bolts Fully tensioned

Based on the above conditions, the reactor would be in which one of the following Modes as defined by Technical Specifications? (DO NOT use special operations LCOs)

a. Mode 2

b. Mode 3

c. Mode 4

d. Mode 5

*ANSWER
a.
*REFERENCE
Technical Specification 1.1, Definitions, Table 1.1-1
New
Level of Difficulty (1 - 5): 2

*QNUM 600090
*HNUM
*ANUM
*QCHANGED FALSE
*ACHANGED FALSE
*QDATE 2000/06/05
*FAC 461
*RTYP BWR-GE6
*EXLEVEL B
*EXMNR
*QVAL 1.0
*SEC 3
*SUBSORT memory
*KA 2.1.29
*QUESTION

A manual throttle valve IN ~~has been installed at the discharge of~~ the Division 1 Shutdown Service Water ~~pump for a special test. A step in the special test procedure calls for this valve is to be~~ closed three turns from full open. The Shift Manager assigns you the job of accompanying the operator who will adjust the throttle valve, to assure that the valve is throttled as called for in the test procedure and to sign off the procedure step. Which of the following are you being ask to ~~perform?~~

for A surveillance test

system(SX) is to be positioned required

a. PEER CHECKING of the operator doing the valve manipulation.

b. DOUBLE VERIFICATION of the operator doing the valve manipulation.

c. INDEPENDENT VERIFICATION of the operator doing the valve manipulation.

d. SIMULTANEOUS VERIFICATION of the operator doing the valve manipulation.

*ANSWER
d.
*REFERENCE
CPS1401.01, Operating Philosophy, Section 8.3.2.3.c
New
Level of Difficulty (1 - 5): 2

*QNUM 600091
*HNUM
*ANUM
*QCHANGED FALSE
*ACHANGED FALSE
*QDATE 2000/06/05
*FAC 461
*RTYP BWR-GE6
*EXLEVEL B
*EXMNR
*QVAL 1.0
*SEC 3
*SUBSORT memory
*KA 2.2.11
*QUESTION
Given the following conditions:

- On May 4, 2000, a corrected Procedure Deviation For Revision (PDR) for a HPCS surveillance was reviewed by the on-shift SM.
- The SM gave preliminary approval for the PDR and a PDR number was assigned. The revised HPCS surveillance was completed later in the day.
- On May 21, 2000, you were assigned to perform the same HPCS surveillance.

Based on the conditions provided above, the PDR. . .

a. is still effective ~~because work has been performed using the PDR.~~ once the PDR is verified to be current.

b. is not still effective because the PDR is more than 14 days old.

c. is still effective ~~because the PDR did not change the intent of the surveillance~~. but must be reviewed by the SM prior to use.

d. is not still effective because a PDR is a one time use document.

*ANSWER
a.
*REFERENCE
CPS 1005.07, CPS Procedures and Documents: Temporary Changes, Sections 2.2.5; 2.2.10; 8.2.1; and 8.4.10.
New
Level of Difficulty (1 - 5): 3

*QNUM 600092
*HNUM
*ANUM
*QCHANGED FALSE
*ACHANGED FALSE
*QDATE 2000/06/05
*FAC 461
*RTYP BWR-GE6
*EXLEVEL B
*EXMNR
*QVAL 1.0
*SEC 3
*SUBSORT higher
*KA 2.2.13

Major revision occurred to this procedure during exam construction

Change tagout to clearance section

*QUESTION
Given the following conditions:

- On May 7, 2000, a ~~tagout~~ to perform maintenance on the RCIC system was issued to an individual in accordance with CPS 1014.01, ~~Safety Tagging.~~ Clearance and Tagging Manual
- On May 18, the individual was called away from the site due to personal issues.
- On May 21, the maintenance on the RCIC system was completed,
- The individual who was issued the tagout has not returned to the site.

Clearance Section Holder

Based on the information provided above, and in accordance with CPS 1014.01:

a. if the tagout holder can be reached by phone, his/her supervisor shall determine if the tagout can be safely released, and release the tagout with a note that the release was made by phone.
sign off

b. if the tagout holder cannot be reached, his/her supervisor shall do a walkdown to determine if the tagout can be safely released, and ~~release the tagout~~.
CAPS system
if so, shall sign off the clearance section

c. if the tagout holder can be reached by phone, the WCS shall evaluate if the tagout can be safely released, and ~~release~~ the tagout with a note that the release was made by ~~phone~~.
if so, shall sign off
CAPS the WCS.

d. If the tagout holder cannot be reached, the Shift Manager (SM) shall perform a detailed review of the work performed, and release the tagout with a note that the release was made by the SM.
sign off

*ANSWER
c.
*REFERENCE Clearance & Tagging Manual, Section 8.6.4 Step 4
CPS 1014.01, ~~Safety Tagging, Sections 6.4 and 8.10.10~~
New
Level of Difficulty (1 - 5):2
VALIDATE AT THE SITE

*QNUM	600093
*HNUM	
*ANUM	
*QCHANGED	FALSE
*ACHANGED	FALSE
*QDATE	2000/06/05
*FAC	461
*RTYP	BWR-GE6
*EXLEVEL	B
*EXMNR	
*QVAL	1.0
*SEC	3
*SUBSORT	higher
*KA	2.2.23

*QUESTION

You are the oncoming A-CRO and are reviewing the main control room logs prior to taking the shift. One of the entries described the HPCS Pump being taken out of service for maintenance. Which ONE of the following special symbols was used with this log entry?

a. Red "E"

b. Red "I"

c. Red Star

d. Red Arrow

*ANSWER

b.

*REFERENCE

LP87465-05, Conduct of Operations, Student Handbook, ph 12/33.

New

Level of Difficulty (1 - 5): 2

Replaced - Narrative Log (NOMS) recently incorporated. Question is N/A to Clinton

*QNUM	600094
*HNUM	
*ANUM	
*QCHANGED	FALSE
*ACHANGED	FALSE
*QDATE	2000/06/05
*FAC	461
*RTYP	BWR-GE6
*EXLEVEL	B
*EXMNR	
*QVAL	1.0
*SEC	3
*SUBSORT	memory
*KA	2.2.28

*QUESTION

In accordance with CPS No. 3703.01, CORE ALTERATIONS, a fuel move is considered completed when the fuel bundle has been placed in it's designated location and:

a. the hoist loaded light goes out.

b. the grapple has been released.

c. the slack cable light is illuminated.

d. the orientation has been double verified.

*ANSWER

b.

*REFERENCE

CPS 3703.01, Core Alterations, Section 2.2.2 (pg. 4/48).

Direct (Clinton Exam Bank Q # 08162)

Level of Difficulty (1 - 5): 2

*QNUM 600095
*HNUM
*ANUM
*QCHANGED FALSE
*ACHANGED FALSE
*QDATE 2000/06/05
*FAC 461
*RTYP BWR-GE6
*EXLEVEL B
*EXMNR
*QVAL 1.0
*SEC 1/3
*SUBSORT memory
*KA 295035A201
*QUESTION
One of the entry conditions to EOP-8, Secondary Containment Control, is Differential Pressure at or above zero (0) inches of water. The differential pressure is being measured between the fuel building and the . . .

a. outside atmosphere.

b. auxiliary building

c. primary containment.

d. secondary containment.

*ANSWER
a.
*REFERENCE
Clinton EOP Technical Basis, EOP-8, pg. 10-4
Direct (Clinton Exam Bank Q # 06665)
Level of Difficulty (1 - 5): 3

*QNUM 600096
*HNUM
*ANUM
*QCHANGED FALSE
*ACHANGED FALSE
*QDATE 2000/06/05
*FAC 461
*RTYP BWR-GE6
*EXLEVEL B
*EXMNR
*QVAL 1.0
*SEC 3
*SUBSORT higher
*KA 2.3.2
*QUESTION
During an outage, the replacement of a reactor water cleanup valve will require 3 person-hours of work without a respirator, or 5 person-hours with a respirator. External dose rate for the area is 75 mRem/hr, and the airborne activity is 15 DAC. (2000 DAC-hrs represents 1 annual limit of intake and is equivalent to 5 Rem CEDE.)
Using TEDE ALARA principles, what is the LEAST dose a worker would receive performing this job?

a. 262.5 mRem

b. 337.5 mRem

c. 412.5 mRem

d. 562.5 mRem

*ANSWER
b.
*REFERENCE
10 CFR 20.1204
New (Perry RO Exam 3/99, Q # 93.)
Level of Difficulty (1 - 5): 3

*QNUM 600097
*HNUM
*ANUM
*QCHANGED FALSE
*ACHANGED FALSE
*QDATE 2000/06/05
*FAC 461
*RTYP BWR-GE6
*EXLEVEL B
*EXMNR
*QVAL 1.0
*SEC 3
*SUBSORT higher
*KA 2.3.4
*QUESTION
Given the following conditions:

- An accident has occurred on the refueling floor and an operator on the Refueling Platform was seriously injured. He is still on the Refueling Platform.
- Radiation levels in the area of the injured operator are 6700 mRem/hr.
- Emergency exposure limit for life saving operations has been authorized.

Calculate the maximum stay time for ONE individual with a lifetime accumulated dose of 4500 mrem who renders life saving assistance to the injured operator.

a. ~~15 minutes~~ 49 minutes with a life time accumulated dose of 4500 mR
b. ~~45 minutes~~ 1 hour 29 minutes
c. ~~1 hr, 30 minutes~~ 3 hours 3 minutes
d. ~~2 hr, 15 minutes~~ 3 hours 43 minutes

*ANSWER
d.
*REFERENCE
EPIP RA-03, Radiological Exposure Guidelines, Section 4.2 (pg. 4/6).
Modified (Clinton Exam Bank Q # 03745)
Level of Difficulty (1 - 5): 2

*QNUM 600098
*HNUM
*ANUM
*QCHANGED FALSE
*ACHANGED FALSE
*QDATE 2000/06/05
*FAC 461
*RTYP BWR-GE6
*EXLEVEL S
*EXMNR BANK
*QVAL 1.0
*SEC 3
*SUBSORT higher
*KA 295020A203
*QUESTION

when an accident occurred which has caused a sustained loss of the non-vital buses. The mode switch was taken to shutdown. Under these conditions, how is

The plant was at 100% RTP ~~while breaker testing was being conducted in the switchyard. The electricians inadvertently opened a breaker causing a sustained loss of non-vital busses. Because of the loss of electrical power, all four turbine building temperature detectors provided INOP signals to CRVICS resulting in an MSIV closure and subsequent reactor scram. Which one of the following is the correct method for verifying that the~~ shutdown criteria ~~is met to avoid entering EOP-1A?~~ verified?

a. Obtain an OD-7, Option 2 or 4 ~~Check GETARS channel 291 [+10 volts = all rods in].~~

b. At either RACSs panel, verify the all rods "full in" LED light is ON.

c. The shift manager determines that the shutdown criteria has been met.

d. Depress the "all rods" pushbutton at the P-680 panel. Verify all rods are 02 or less.

*ANSWER
b.
*REFERENCE
CPS No. 4100.01, Reactor Scram, Section 2.1, Control Rods Fully Insert
New
Level of Difficulty (1 - 5): 3

a. was also correct.
new a. -process computer is deenergized.

*QNUM 600099
*HNUM
*ANUM
*QCHANGED FALSE
*ACHANGED FALSE
*QDATE 2000/06/05
*FAC 461
*RTYP BWR-GE6
*EXLEVEL B
*EXMNR
*QVAL 1.0
*SEC 3
*SUBSORT memory
*KA 2.4.25
*QUESTION
The plant is at 100% RTP. The Field Supervisor, who was designated as the Fire Brigade Leader, had to leave the site due to illness. If a fire was identified in the Turbine Building prior to another individual being specifically designated as the Fire Brigade Leader, the individual who would assume the duties as the Fire Brigade Leader is the:

a. Shift Manager

b. Control Room Supervisor

c. Work Control Supervisor

d. ~~The "D"~~ Area Operator
A fully Certified "E"

*ANSWER
c.
*REFERENCE
CPS 1001.06, CPS Fire Brigade, Section 2.2.5 (pg. 4/15)
CPS 1893.00, Operational Fire Protection Program, Section 3.6 (pg. 5/10)
CPS 1401.05, Operator Logs & Records, Section 8.3.7 (Table 1) pg. 10/26
Modified (Clinton 2/98 RO Exam, Q # 9)
Level of Difficulty (1 - 5): 2

d. could be correct depending on qual level of "D" Area Operator

*QNUM 600100
*HNUM
*ANUM
*QCHANGED FALSE
*ACHANGED FALSE
*QDATE 2000/06/05
*FAC 461
*RTYP BWR-GE6
*EXLEVEL B
*EXMNR
*QVAL 1.0
*SEC 3
*SUBSORT memory
*KA 2.4.29
*QUESTION
Given the following conditions:

- An event has occurred and a Site Area Emergency has been declared.
- The TSC, OSC, and EOF have been activated and staffed.
- An electrical malfunction has rendered the TSC unusable and the ~~Site~~ Station Emergency Director has directed that the TSC be relocated.

The alternate location of the TSC is the:

a. Nuclear Support Annex

b. Nuclear Training Building (EOF)

c. Personnel Processing Building

d. Nuclear Program Support Building

*ANSWER
b.
*REFERENCE
EPIP FE-01, TSC Operations, Section 4.6, pg 6/7.
Modified
Level of Difficulty (1 - 5): 2

*QNUM 600101
*HNUM
*ANUM
*QCHANGED FALSE
*ACHANGED FALSE
*QDATE 2000/06/05
*FAC 461
*RTYP BWR-GE6
*EXLEVEL S
*EXMNR BANK
*QVAL 1.0
*SEC
*SUBSORT memory
*KA 295003K303
*QUESTION
A Station Blackout has occurred. In accordance with CPS 4200.01, Loss of AC Power, if Station Blackout is prolonged greater than one hour, then DC loads are to be reduced ~~in sequence~~. Why?

a. To ensure a 4 hour DC supply to maintain manual SRV control.

b. To provide sufficient DC load capacity to allow for 8 hour operability of the LPCI system.

c. To provide prolonged operability of RHR B and C control power and Diesel Generator 1B control.

d. To provide continued RCIC control power up to 8 hours after the total loss of AC.

*ANSWER
a.
*REFERENCE
CPS 4200.01, Section 6.3.5, p.19
Direct
LOD:2

*QNUM	600102
*HNUM	
*ANUM	
*QCHANGED	FALSE
*ACHANGED	FALSE
*QDATE	2000/06/05
*FAC	461
*RTYP	BWR-GE6
*EXLEVEL	S
*EXMNR	BANK
*QVAL	1.0
*SEC	
*SUBSORT	higher
*KA	295014K106

*QUESTION

Reactor power was reduced from 100% to 78% RTP to adjust the control rod pattern. During the rod pattern adjustment the next rod motion required rod XX-XX to be moved from position 38 to position 40. The reactor operator inadvertently depressed the insert pushbutton and inserted rod XX-XX to position 36. The rod is now at the same core depth as two adjacent control rods. You should direct the operator to IMMEDIATELY:

a. b reduce reactor power 50 MWe by recirc flow control, then return the rod to notch 38 and notify reactor engineering.

b. a insert the rod to position 32 ~~until it is staggered at least 2 notches from the adjacent rods, then notify reactor engineering~~.

c. return the rod to notch 38; then, after documenting the mis-positioned control rod, continue with the rod pattern adjustment.

d. reduce reactor power by cram array insertion, then notify reactor engineering, return the rod to notch 38 when directed by reactor engineering, document the mis-positioned control rod.

*ANSWER

~~b.~~ A

*REFERENCE

CPS No. 4007.02, Inadvertent Rod Movement, Section 3.3

New

LOD:3

*QNUM 600103
*HNUM
*ANUM
*QCHANGED FALSE
*ACHANGED FALSE
*QDATE 2000/06/05
*FAC 461
*RTYP BWR-GE6
*EXLEVEL S
*EXMNR BANK
*QVAL 1.0
*SEC
*SUBSORT higher
*KA 295010A202
*QUESTION
A Safety Relief Valve (SRV) tailpipe vacuum breaker has failed in the open position during SRV operation. Which of the following will result?

a. Direct pressurization of the containment each time the SRV is opened.

b. Steam bypassing the T-quenchers with a direct discharge path into the suppression pool water.

c. Suppression pool water being drawn up into the SRV tailpipe line after the SRV is closed.

d. Direct pressurization of the drywell each time the SRV is opened.

*ANSWER
d.
*REFERENCE
SD-MS
New
LOD:2

*QNUM 600104
*HNUM
*ANUM
*QCHANGED FALSE
*ACHANGED FALSE
*QDATE 2000/06/05
*FAC 461
*RTYP BWR-GE6
*EXLEVEL S
*EXMNR BANK
*QVAL 1.0
*SEC
*SUBSORT memory
*KA 295013K201
*QUESTION
The plant is at 100% RTP with one loop of RHR in service in the Suppression Pool cooling mode for routine cooldown. If an SRV inadvertently opened and the other loop of RHR was immediately started in Suppression Pool cooling, which of the following will result if the SRV CAN NOT be reclosed?

a. uc heat-up of the suppression pool. Two heat exchangers are less than the heat rate of an open SRV.

b. uc continued cooldown of the pool. Each heat exchanger is sized to equal the heat rate of one open SRV.

c. uc continued cooldown of the pool with both loops in operation, but at a reduced rate due to the open SRV. Two heat exchangers slightly exceed the heat rate of one SRV.

d. uc heat up of the suppression pool, but when the second loop of suppression pool cooling is put in service, the heat-up will stop. Two heat exchangers equal the heat rate of one SRV.

*ANSWER
a.
*REFERENCE
LP87509, Suppression Pool, Step 1.7
LP85234, Objective .1
Direct
LOD:2

*QNUM 600105
*HNUM
*ANUM
*QCHANGED FALSE
*ACHANGED FALSE
*QDATE 2000/06/05
*FAC 461
*RTYP BWR-GE6
*EXLEVEL S
*EXMNR BANK
*QVAL 1.0
*SEC
*SUBSORT higher
*KA 295016A204
*QUESTION

The Main Control Room has been evacuated and control is now at the Remote Shutdown Panel. The Main Steam Isolation Valves (MSIVs) ~~have automatically~~ closed and pressure control is by manual operation of the Safety Relief Valves (SRVs). IDENTIFY the condition REQUIRING ~~the~~ SRV~~s be closed.~~ closure.

It is now 50 minutes since the reactor ~~re~~ scrammed and the control room was evacuated.

a. Suppression pool temperature is 120°F.

b. Suppression pool water level is 18.5 feet. 9

c. Instrument air header pressure to the drywell is 70 psig.

d. RPV pressure is less than 875 psig ~~with the mode switch left in RUN.~~ 415

*ANSWER
a. d
*REFERENCE
CPS 4003.01, "Remote Shutdown", Page 9 of 63
LP 87503, "Remote Shutdown", L.O. - 1.4
Direct
LOD: 3

*QNUM 600106
*HNUM
*ANUM
*QCHANGED FALSE
*ACHANGED FALSE
*QDATE 2000/06/05
*FAC 461
*RTYP BWR-GE6
*EXLEVEL S
*EXMNR BANK
*QVAL 1.0
*SEC
*SUBSORT higher
*KA 295018A203
*QUESTION
The station was operating at 90% RTP. The following conditions were noted by the reactor operator:

- CCW temperature increasing slowly
- CCW Surge Tank level increasing slowly
- No other alarms or abnormal indications present.

Which one of the following malfunctions would cause these indications ?

a. CCW heat exchanger tube leak(s).

b. RWCU non-regenerative heat exchanger tube leak.

c. CCW heat exchanger temperature element failed high.

d. Loss of instrument air to the CCW heat exchanger temperature control valves.

*ANSWER
b.
*REFERENCE
System description - CC
New
LOD: 2

*QNUM 600107
*HNUM
*ANUM
*QCHANGED FALSE
*ACHANGED FALSE
*QDATE 2000/06/05
*FAC 461
*RTYP BWR-GE6
*EXLEVEL S
*EXMNR BANK
*QVAL 1.0
*SEC
*SUBSORT ~~memory~~ higher
*KA 223002G005
*QUESTION
A reactor heat up is in progress with reactor pressure at 700 psig. A surveillance to test the stroke close times of the Main Steam Isolation Valves has just been completed with the following results:

Inboard		Outboard	
F022A	3.1 seconds	F028A	2.8 seconds
F022B	4.2 seconds	F028B	4.9 seconds
F022C	3.5 seconds	F028C	2.9 seconds
F022D	2.7 seconds	F028D	3.9 seconds

Which one of the following is the appropriate operator response?

a. Continue reactor heatup, closing times are within allowable closure times.

b. Shut the "B" main steam line isolation valves within 1 hour.

c. Shut the "A," "C," and "D" main steam line isolation valves within 8 hours.

d. Be in at least HOT SHUTDOWN within 12 hours and COLD SHUTDOWN within the following 24 hours.

*ANSWER
d. → c
*REFERENCE
CPS Technical Specifications 3.6.1.3.E
New
LOD: 3

*QNUM 600108
*HNUM
*ANUM
*QCHANGED FALSE
*ACHANGED FALSE
*QDATE 2000/06/05
*FAC 461
*RTYP BWR-GE6
*EXLEVEL S
*EXMNR BANK
*QVAL 1.0
*SEC
*SUBSORT memory
*KA 295021 2.1.32
*QUESTION
CPS No. 3312.03, "RHR - SHUTDOWN COOLING (SDC) & FUEL POOL COOLING AND ASSIST (FPC&A)" has a caution that states that anytime reactor recirculation is secured with the steam separator in place, RPV water level should be maintained above +44" - Shutdown Range OR +61" - Upset Range. The purpose of this caution is to:

a. minimize radiation levels on the refuel floor.

b. ensure sufficient water to cause natural circulation.

c. ensure residual heat from the steam separator is removed.

d. ensure minimum net positive suction head on the residual heat removal pump providing shutdown cooling.

*ANSWER
b.
*REFERENCE
CPS No. 3313.03
New
LOD: 2

*QNUM 600109
*HNUM
*ANUM
*QCHANGED FALSE
*ACHANGED FALSE
*QDATE 2000/06/05
*FAC 461
*RTYP BWR-GE6
*EXLEVEL S
*EXMNR BANK
*QVAL 1.0
*SEC
*SUBSORT memory
*KA 295024K102
*QUESTION
SELECT the condition in which primary containment integrity considerations take precedence over adequate core cooling.

a Drywell temperature cannot be maintained below 330 deg F.

b. Containment temperature cannot be maintained below 185 deg F.

c. Suppression pool temperature cannot be maintained below Heat Capacity Limit.

d. Drywell/Containment pressure cannot be maintained below Primary Containment Pressure Limit.

*ANSWER
d
*REFERENCE
EOP-6, Primary Containment Control
New
LOD: 2

*QNUM 600110
*HNUM
*ANUM
*QCHANGED FALSE
*ACHANGED FALSE
*QDATE 2000/06/05
*FAC 461
*RTYP BWR-GE6
*EXLEVEL S
*EXMNR BANK
*QVAL 1.0
*SEC
*SUBSORT higher
*KA 295035A201
*QUESTION
Which one of the following is of concern when a ~~high~~ low Secondary Containment Differential Pressure exists?

a. There is a high heat load somewhere in the secondary containment that may damage the structure.

b, There could be an unmonitored ground level release of radioactivity.

c. Instrumentation inside the secondary containment is not EQ certified to operate correctly after the 10 psid alarm setpoint is exceeded.

d. If the differential pressure is allowed to continue to increase, it will pose a direct threat to operability of equipment that is important to safety within the secondary containment.

*ANSWER
b.
*REFERENCE
TS Basis 3.6.4.1, Secondary Containment
New
LOD: 4

*QNUM	600111
*HNUM	80000120
*ANUM	80000122
*QCHANGED	FALSE
*ACHANGED	FALSE
*QDATE	2000/06/05
*FAC	461
*RTYP	BWR-GE6
*EXLEVEL	S
*EXMNR	BANK
*QVAL	1.0
*SEC	
*SUBSORT	memory
*KA	500000A103

*QUESTION

A High Containment Hydrogen concentration of 6 percent was observed. What is(are) the expected operator actions for this event with respect to the Combustible Gas Control System?

a. Stop the hydrogen recombiners.

b. Startup the hydrogen igniters to control-burn the hydrogen to less than 4 percent concentration.

c. Manually control the hydrogen recombiners to process 70 scfm to lower the hydrogen concentration.

d. Stop the hydrogen igniters and reduce the hydrogen concentration using the hydrogen recombiners and compressors until hydrogen concentration is less than 4 percent and then restart the igniters.

*ANSWER

a.

*REFERENCE

CPS No. 4411.11, Hydrogen Control System Operation Section 2.6

New

LOD: 3

*QNUM	600112
*HNUM	23872
*ANUM	23360
*QCHANGED	FALSE
*ACHANGED	FALSE
*QDATE	2000/06/05
*FAC	461
*RTYP	BWR-GE6
*EXLEVEL	S
*EXMNR	BANK
*QVAL	1.0
*SEC	
*SUBSORT	higher
*KA	201001A210

*QUESTION

A control rod is at position 48. Testing of the control rod revealed a scram time of 7.5 seconds from position 48 to position 13. The control rod can still be positioned by normal control rod drive pressure. The reactivity margin is adequate for all positions of the control rod. Which one of the following states the status of this control rod?

a. It is operable.

b. It is inoperable but may remain electrically armed at position 48.

c. It is inoperable and must be electrically disarmed at position 00.

d. It is inoperable but may remain electrically armed if driven into position 00.

*ANSWER

c.

*REFERENCE

1. TS 3.1.3.C.1, & 2

New

LOD: 3

*QNUM	600113
*HNUM	18493
*ANUM	18502
*QCHANGED	FALSE
*ACHANGED	FALSE
*QDATE	2000/06/05
*FAC	461
*RTYP	BWR-GE6
*EXLEVEL	S
*EXMNR	BANK
*QVAL	1.0
*SEC	
*SUBSORT	higher
*KA	201005K507

*QUESTION

A plant startup is being conducted. Power is at 17%. A C&I technician has just reported to you that he has completed calibrating the low power setpoint analog trip modules. The setpoints are all 17%. He also reports it has been 91 days since the last time the modules were calibrated. You should . . .

a. continue the startup, no restrictions exist.

b. enter T.S. 3.0.3 and commence a plant shutdown.

c. inform the "A" ~~man~~ CRO that he is to suspend control rod withdrawal.

d. inform the "A" ~~man~~ CRO that he is only allowed to move control rods by scram.

*ANSWER

d.

*REFERENCE

CPS Technical Specifications 3.3.2.1

New

LOD: 2

*QNUM 600114
*HNUM 800104
*ANUM 800106
*QCHANGED FALSE
*ACHANGED FALSE
*QDATE 2000/06/05
*FAC 461
*RTYP BWR-GE6
*EXLEVEL S
*EXMNR BANK
*QVAL 1.0
*SEC
*SUBSORT higher
*KA 201003 2.1.33
*QUESTION
Which of the following conditions would NOT allow an OPERATIONAL CONDITION MODE CHANGE from Condition 4 to Condition 2?

a. One INOPERABLE control rod that is immovable because of excessive friction.

b. Two OPERABLE adjacent control rods that are determined to be SLOW during SCRAM time testing.

c. Three INOPERABLE control rods that have accumulators that CANNOT be charged.

d. Four INOPERABLE control rods that are not in compliance with the banked position withdrawal sequence.

*ANSWER
b.
*REFERENCE
T.S. 3.1.3, 4, 5, & 6
New
LOD: 3

*QNUM 600115
*HNUM 19255
*ANUM 19084
*QCHANGED FALSE
*ACHANGED FALSE
*QDATE 2000/06/05
*FAC 461
*RTYP BWR-GE6
*EXLEVEL S
*EXMNR BANK
*QVAL 1.0
*SEC
*SUBSORT higher
*KA 215005 2.2.22
*QUESTION

Three hours ago APRM "C" was declared inoperable and all required tech spec actions associated with declaring APRM "C" inoperable were completed. Repairs are expected to be completed within the next 12 hours. C & I has now informed you that they just discovered that while performing a reactor protection system surveillance four hours ago on APRM "A," the APRM "A" neutron flux-high trip response time ~~was 0.15 seconds~~. Which one of the following actions is required to be taken? did not meet the surveillance acceptance criteria

a. Manually scram the reactor by placing the mode switch in SHUTDOWN.

b. The surveillance results on APRM "A" were acceptable. Continue repairs on APRM "C" and restore it to operable status.

c. Declare APRM "A" INOP and commence an orderly shutdown and be in at least STARTUP/HOT STANDBY in the next 8 hours.

d. Continue to work on APRM "C" and when it is declared OPERABLE, maintenance can be allowed on APRM "A".

*ANSWER
c.
*REFERENCE
T.S.3.3.1.1 ~~G~~ B.1
New
LOD: 3

b. Commence an orderly shutdown and be in at least STARTUP/HOT STANDBY in the next 8 hours.

d. Place one APRM channel in trip in the next 3 hours, make repairs to either APRM channel, then repair the other channel

c. ~~d.~~ Continue to work on APRM "C" and restore it to OPERABLE status within 48 hours. When it is declared OPERABLE, maintenance can be started on APRM "A" to restore it to OPERABLE status within 48 hours.

duplicate except the

*QNUM 600116
*HNUM 24725
*ANUM 24179
*QCHANGED FALSE
*ACHANGED FALSE
*QDATE 2000/06/05
*FAC 461
*RTYP BWR-GE6
*EXLEVEL S
*EXMNR BANK
*QVAL 1.0
*SEC
*SUBSORT memory
*KA 219000 2.1.32
*QUESTION
CPS No. 3312.03, RHR - Shutdown Cooling (SDC) & Fuel Pool Cooling and Assist (FPC&A) has a caution that states, "If RHR Loop A and LPCS are operated at the same time, do not operate with RHR Loop A in minimum flow and LPCS in full flow test." What is the basis for this caution?

a. The discharge pressure on RHR loop A will increase and lift the RHR-A discharge safety relief valve.

b. RHR loop A flow will decrease to a value that is less than the minimum required flow for the RHR-A pump.

c. LPCS system flow will increase until suction pressure decreases enough to cause LPCS pump cavitation.

d. LPCS system flow instrumentation will give an erroneous reading that invalidates any surveillance testing under these system conditions.

*ANSWER
b.
*REFERENCE
CPS No. 3312.03, Paragraph 4.9
New
LOD: 2

*QNUM 600117
*HNUM
*ANUM
*QCHANGED FALSE
*ACHANGED FALSE
*QDATE 2000/06/05
*FAC 461
*RTYP BWR-GE6
*EXLEVEL S
*EXMNR
*QVAL 1.0
*SEC
*SUBSORT higher
*KA 234000A301
*QUESTION
The Refuel platform is over the core and the HOIST LOADED indicator is NOT on, the Mode Switch is in Refuel and one control rod is selected and partially withdrawn. Which one of the following conditions will prevent reverse motion of the Refuel platform?

a. Selecting a different Control Rod.

b. Loading the auxiliary platform hoist.

c. Placing the Mode Switch in STARTUP.

d. Refuel floor HI-HI Radiation trip.

*ANSWER
c.
*REFERENCE
CPS No. 9090.01, page 15
New
LOD: 3

*QNUM	600118
*HNUM	30910
*ANUM	29935
*QCHANGED	FALSE
*ACHANGED	FALSE
*QDATE	2000/06/05
*FAC	461
*RTYP	BWR-GE6
*EXLEVEL	S
*EXMNR	BANK
*QVAL	1.0
*SEC	
*SUBSORT	memory
*KA	239002A406

*QUESTION

A failure to scram has occurred. The following conditions exist:

- ADS has been inhibited
- SLC pump A is operating.
- Seven SRVs are operable and are being manually cycled for pressure control.
- Feed pumps and RCIC are maintaining RPV level.
- Suppression pool level is 15 feet.

Blowdown is required due to high Suppression pool temperature. What action must be taken by the crew prior to blowdown?

a. ADS must be un-inhibited.

b. Suppression pool level must be raised to 23 feet.

c. ~~RCIC and~~ feedwater injection must be terminated.

d. All injection (RCIC, Feed, & SLC) must be terminated.

*ANSWER

c

*REFERENCE

CPS EOP-3

New

LOD: 2

*QNUM	600119
*HNUM	
*ANUM	
*QCHANGED	FALSE
*ACHANGED	FALSE
*QDATE	2000/06/05
*FAC	461
*RTYP	BWR-GE6
*EXLEVEL	S
*EXMNR	BANK
*QVAL	1.0
*SEC	
*SUBSORT	memory
*KA	286000 2.1.33

*QUESTION

Select the one condition that describes when HOURLY FIRE WATCH(ES) Patrol must be established.

a. The Diesel Driven Fire Pump is inoperable. "A"

c ~~b.~~ The smoke detection string for the ~~HPCS~~ Div. 3 Diesel Room is inoperable. Generator

b ~~c.~~ Welding / Hot work is going on inside the weld shop area. ~~The fire suppression header valve line-up was completed ten days ago.~~

d. ~~Both Halon storage tanks associated with the Central alarm station are 95% of design fill weight.~~ Safe Shutdown Pathway Emergency Lighting Functional Test, CPS No. 3822.16, is past ~~due~~ its due date, but ~~is~~ is still within its late date.

*ANSWER

~~b.~~ c

*REFERENCE

CPS No. 1893.01, Fire Door Compensatory Measures, Appendix A, Section 3

New

LOD: 2

FIND BETTER DISTRACTORS (c&d) OR REPLACE

*QNUM 600120
*HNUM
*ANUM
*QCHANGED FALSE
*ACHANGED FALSE
*QDATE 2000/06/05
*FAC 461
*RTYP BWR-GE6
*EXLEVEL S
*EXMNR BANK
*QVAL 1.0
*SEC
*SUBSORT higher
*KA 2.1.3
*QUESTION
As the shift manager, you are prepared to conduct a shift turnover. In addition to the normally assigned shift operators, the plant manager, two AmerGen management visitors, the station's electrical maintenance manager, an electrician and a peer evaluator from WNP-2 are present for the shift turnover. According to the CPS administrative procedures, which one of the following is allowed to conduct the shift turnover?

a. allow the shift turnover to continue, the number of additional personnel is not excessive.

b. ask the WNP-2 peer evaluator to leave the room, then allow the shift turnover to continue.

c. ask the electrical maintenance manager and the electrician to leave the room, then allow the shift turnover to continue.

d. ask all the non-operations personnel to leave and have a separate ~~executive shift turnover~~ briefing for them after the operator shift turnover is complete.

*ANSWER
d.
*REFERENCE
CPS No. 1401.04, Shift Turnover and Relief, Section 8.6.5
New
LOD: 2

*QNUM 600121
*HNUM
*ANUM
*QCHANGED FALSE
*ACHANGED FALSE
*QDATE 2000/06/05
*FAC 461
*RTYP BWR-GE6
*EXLEVEL S
*EXMNR BANK
*QVAL 1.0
*SEC
*SUBSORT memory
*KA 2.1.9
*QUESTION
You are the shift manager preparing for an evolution that is infrequently performed and has numerous cautions and precautions. You have determined that a Heightened Level of Awareness Pre-Job brief is necessary. (1) Who is responsible to ensure management's expectations concerning the cautions and precautions are met and, (2) who should conduct the brief to explain the cautions and precautions?

	(1) Who is Responsible?	(2) Who Conducts?
a.	Senior Management Rep	~~Unit Supervisor~~ CRS
b.	Plant Manager	Person most knowledgeable about the evolution
c.	Assistant Plant Mgr	Shift Manager
d.	Shift Manager	Person most knowledgeable about the evolution

*ANSWER
d.
*REFERENCE
CPS No. 1401.11, Planning and Control of Evolutions, Section 8.2
New
LOD: 2

*QNUM 600122
*HNUM
*ANUM
*QCHANGED FALSE
*ACHANGED FALSE
*QDATE 2000/06/05
*FAC 461
*RTYP BWR-GE6
*EXLEVEL S
*EXMNR
*QVAL 1.0
*SEC
*SUBSORT memory
*KA 2.2.6
*QUESTION
Which one of the following changes can be done with a temporary procedure deviation (TPD)?
The TPD . . .

a. does not alter intent of procedure

b. is to an EOP Flowchart (440X.01 series).

c. incorporates a temporary modification.

d. will be in effect for 92 days.

*ANSWER
a.
*REFERENCE
CPS No. 1005.07, Temporary Change Approval Checklist, Section 1
New
LOD: 2

*QNUM 600123
*HNUM
*ANUM
*QCHANGED FALSE
*ACHANGED FALSE
*QDATE 2000/06/05
*FAC 461
*RTYP BWR-GE6
*EXLEVEL S
*EXMNR BANK
*QVAL 1.0
*SEC
*SUBSORT higher
*KA 2.2.24
*QUESTION
Given the following:

- The plant is in Mode 5 with refueling operations in progress.
- The Core Alterations Surveillance Log shows that the refuel position one-rod-out interlock surveillance was last completed at 0800.

Then, when performed at 2130 by operations, the one-rod-out interlock surveillance failed. What actions are required in accordance with CPS Technical Specifications?

a. Immediately suspend loading of irradiated fuel into the RPV; initiate action to restore Secondary Containment to operable.

b. Immediately suspend in-vessel fuel movement with equipment associated with the inoperable interlock and insert all insertable control rods.

c. Immediately suspend control rod withdrawal and initiate actions to fully insert all insertable control rods in cells containing one or more fuel assemblies.

d. Immediately initiate action to insert all insertable control rods and place the mode switch in the SHUTDOWN position in 1 hour.

*ANSWER
c.
*REFERENCE
Technical Specifications SR 3.9.2.2: Perform CHANNEL FUNCTIONAL TEST, 7 days
LP87630, Objective .1.2.2
Direct
LOD: 2

*QNUM 600124
*HNUM
*ANUM
*QCHANGED FALSE
*ACHANGED FALSE
*QDATE 2000/06/05
*FAC 461
*RTYP BWR-GE6
*EXLEVEL S
*EXMNR
*QVAL 1.0
*SEC
*SUBSORT memory
*KA 2.3.4
*QUESTION
Authorization to receive radiological exposures in excess of 10CFR20 limits is the responsibility of the _____.

a. Recovery Manager

b. Emergency Director

c. Radiation Protection Coordinator

d. Radiological Assessment Coordinator

*ANSWER
b.
*REFERENCE
EPIP EC-01, Attachment 2, page 1
New
LOD: 2

*QNUM 600125
*HNUM
*ANUM
*QCHANGED FALSE
*ACHANGED FALSE
*QDATE 2000/06/05
*FAC 461
*RTYP BWR-GE6
*EXLEVEL B
*EXMNR BANK
*QVAL 1.0
*SEC
*SUBSORT higher
*KA 2.4.4
*QUESTION
The plant was operating at 100% RTP. Fuel movement activities were being conducted in the spent fuel pool. A fuel bundle was inadvertently dropped while being moved. The bundle being moved and three additional bundles were damaged before the falling bundle settled on its side. Bubbles were seen by the operators on the refuel bridge, and shortly thereafter the VF exhaust radiation PRM (1RIX-PR006) was noted to be reading 11.2 mr/hr. The local ARM at the spent fuel pool was alarming. You should:

a. enter EOP-9, radioactivity release control.

b. enter EOP-1, RPV control and place the mode switch in SHUTDOWN.

c. verify that the fuel building ventilation system has isolated and standby gas has started.

d. closely monitor VF exhaust radiation levels. If they go above 12 mr/hr, then enter EOP-8, secondary containment control.

*ANSWER
c.
*REFERENCE
EOP-8, Secondary Containment Control
New
LOD: 3

License Test/Examination Changes

(from outline to submitted)

Administrative Topics:

A.1	(SRO)	Replaced two Night Order/Standing Order questions with one JPM to write and issue a Night Order. (Better evaluation tool)
A.3	(SRO)	Replaced the JPM. CPS is a zero discharge station, no rad waste discharges.
B.1.e	(RO/SRO)	Replaced the JPM. JPM was extremely lengthy with significant communications from the field that did not provide additional evaluation for the examiner.
B.1.g	(RO)	Replaced the JPM, material not simulated in the simulator, many operations outside the control room.
B.2.c	(RO/SRO)	Replaced the JPM. The replacement was in safety function 4, which was eliminated when B.1.e was replaced.

Test Changes after Validation

A.1.a	(RO/SRO)	Replaced the JPM. Video taped material.
A.1.b	(RO)	Replaced the JPM. Video taped material.
A.4	(RO)	Replaced the JPM. Video taped material.
note	RO/SRO	Retained B.1.b (SRO), A.2 (RO/SRO), A.3 (RO/SRO), & A.4 (SRO) from validation
B.1.a	(RO/SRO)	Replaced the JPM. Video taped material.
B.1.b	(RO)	Replaced the JPM. Video taped material.
B.1.c	(RO)	Replaced the JPM. Video taped material.
B.1.d	(RO/SRO)	Replaced the JPM. Video taped material.
B.1.e	(RO)	Replaced the JPM. Video taped material.
B.1.f	(RO)	Replaced the JPM. Video taped material.
note	RO/SRO	B.1.g was replaced by an NRC supplied JPM
B.2.a	(RO/SRO)	Replaced the JPM. Station procedure was not useable.
B.2.b	(RO)	Replaced the JPM. Video taped material.
B.2.c	(RO/SRO)	Replaced the JPM. Video taped material.
C.	(RO/SRO)	Scenario 3 was deleted. Not needed.

Changes Made to Scenario 1 During Validation Week.

Initial Event No. 1: (Reactivity) - Power Reduction to < 80% with FCV in preparation for MSIV Stroke Test.

Revised Event No. 1: Power Reduction to 75% with FCV in preparation for MSIV Stroke Test.

Basis for change:

- Based on performance by operating crew during validation week, the NRC and licensee revised the initial conditions to reduce the amount of time needed to evaluate the reactivity change.

****

Initial Event No. 3: (RO-I) FWCS MASTER LEVEL CONTROLLER SLOW FAILURE LOW (~ 1 in/min ramp). MANUAL CONTROL WILL WORK.

Revised Event No. 3: Rx Water Level Channel "A" Fails ~ 40".

Bases for changes:

- The FWCS Master Level Controller does not have a manual selection available.
- Possible entry into Loss of Feedwater Heating AOP.
- The operating crew indicated that they would not place two RFPs in manual and attempt to control level. The crew indicated that the plant would be too unstable and they would scram the plant. The NRC and licensee agreed that the revised instrument failure would be adequate to evaluate the RO's performance.

****

Initial Event No. 5: (SRO-TS & C) Offgas Post-Treatment Rad Monitor (PR035) Fails High. Offgas vent stack valve (N66FO60) will close.

Revised Event No. 5: Inoperable Div 2 Shutdown Service Water (SX) Pump. Engineering Reports that bearing oil samples indicate the upper pump bearing has failed.

Basis for change:

- The Offgas Post-Treatment Rad Monitor (PR035) is in the Offsite Dose Calculation Manual (OCDM) Section 3.9. The NRC and licensee were unable to find a clear, direct link between the component failure and TS. Because there was no clear, direct link between the component failure and TS, the NRC and licensee agreed to insert a new component failure.

****

Initial Event No. 6: (BOP-C) Loss of one service air (SA) compressor and STANDBY SA compressor will not auto start. It will start manually. Concurrent SMALL IA Leak.

Revised Event (No. 7): Loss of "B" service air (SA) compressor. SMALL IA Leak After Standby Compressor Started.

Basis for change:

- The NRC and licensee agreed to change the order of events to ensure the all of the required instrument/component failures were evaluated prior to the major event. With IA failure, the operating crew may decide to scram the plant early in the event.

****

Changes Made to Scenario 1 During Validation Week.

Initial Event No. 7: Power Reduction w/ FCV to Due to IA Small Header Leak. The power reduction was removed from the scenario.

Basis for change:

- Based on performance by operating crew during validation week, the power reduction was not started in a reasonable amount of time. The NRC and licensee agreed that the power reduction (and second reactivity change) was not needed to evaluate the Applicants' performances.

****

Initial Event No. 8: (RO-C) CRD Auto Flow Control Valve (FO02A) Fails Shut in Auto. (Will work in manual control)

Revised Event (No. 6): Condenser Emergency Overflow Valve (1CD020) Fails Open. RO can take manual control of controller and close valve.

Bases for changes:

- The NRC and licensee agreed to change the order of events to ensure the all of the required instrument/component failures were evaluated prior to the major event.
- The Auto/Manual control station for the CRD Auto Flow Control Valve (FO02A) is on panel P-601. By the licensee's operating procedures, the CRD flow valve controller would not be manipulated by the RO. The NRC and licensee agreed to insert a new component failure. The Condenser Emergency Overflow Valve controller is on panel P-680, the RO's panel.

****

Initial Events 9 - 12 were renumbered to 8 - 11 in order to reflect the removal of Initial Event No. 7, "Power Reduction w/ FCV to Due to IA Small Header Leak. "

****

Termination point for Scenario 1 was revised.

Initial termination point for Scenario 1:

All rods inserted and RPV level and pressure are stable.

In the Initial Scenario, the success path was two fold:

(1) reduce level & maintain level Band C [-162" (TAF) to XX?? (level at beginning of step)] until: Power < 5% OR Level @ -130" OR All SRVs closed AND D/W press stays below 1.68 psig; AND

(2) when power was < 5% due to RPV level drop, the scram function would be restored and all rods would be inserted.

Revised Termination Point for Scenario 1:

Rods are being inserted and RPV level and pressure are under control.

Changes Made to Scenario 1 During Validation Week.

In the Revised Scenario, the success path was also two fold:

(1) Bypass the Rod Pattern Controller per procedure CPS 4411.08 and to manually insert rods; and

(2) If ≤ 5% power OR ≤ 60", Terminate & Prevent injection of HPCS, LPCS, & LPCI. Maintain level band A [-162" (TAF) to Level 8 (52")] OR
If > 5% power AND > 60", lower level to reduce sub-cooling. Terminate & Prevent injection using Insert F1. (Cond/Feed, HPCS, RCIC (if not operating), LPCS, LPCI, etc..). Maintain level band B [-162" to -60"]

Bases for changes:

- Based on performance by operating crew during validation week, the plant conditions after the ATWS and after the failure of SLC to inject, the EOPs would not direct the operating crew to reduce level & maintain level Band C.
- The NRC and licensee agreed that restoring the scram function and having all rods inserted would not be realistic without operator action (either in the field or control room).
- The NRC and licensee agreed that requiring level and pressure to be stable was an unrealistic expectation given that the plant was recovering from an ATWS and was conducting a plant cooldown. The NRC and licensee agreed that verifying that level and pressure were under control was an adequate evaluation of crew performance.

Facility: Clinton Scenario No.: 1 Op-Test No.: 2000301

Examiners: _____ Operators: _____

Objectives: Exercise EOP-1A ATWS RPV Control. Goal is to have operators Manually insert rods to shutdown the Rx ~~reduce power < 5% with level control~~. Evaluate applicants while: 1) reducing power with FCV to support the MSIV stroke test, 2) conducting MSIV stroke test, 3) ~~responding to FWCS Master Level Controller fail low (~ 1 in/min)~~, 4) responding to main turbine lube oil temperature controller failure causing high lube oil temperature, 5) SRO respond to inoperable Div 2 SX pump ~~responding to Offgas Post-Treatment radiation monitor failing high (isolates Offgas stack flow)~~, ~~6~~ 7 responding to loss of operating service air (SA) compressor & small instrument air (IA) leak, ~~7) reducing power due to IA leak~~, 6) responding to hotwell reject valve failing open ~~8) responding to CRD Flow Control Valve (FCV) failing shut~~, ~~9~~ 8 responding to one MSIV drifting off full open seat due to IA leak, ~~10~~ 9 responding to rod drift alarm due to IA leak, ~~11~~ 10 responding to ATWS (hydraulic lock), ~~12~~ 11 SLC not inject.

Initial Conditions: 100% power for last 150 days. Div I DG ~~and the MDRFP are~~ out of service. New Fuel is being ~~fuel shuffle in spent fuel pool.~~ loaded into the new fuel storage vault.

Last shift power was reduced to 78% in preperation for conducting MSIV stroke test.

Turnover: ~~Unit is at 100%. Power was reduced for rod pattern adjustment last shift.~~ Div I DG in out of service - maintenance is replacing a leaking relief valve on the air start system. It has been out of service for 1 day and is expected to be tested towards the end of this shift. ~~The MDRFP is out of service - motor bearing replacement.~~ New fuel is being loaded into the new fuel storage vault. Reduce power to 75% (or 45% FCV position). As soon as power is reduced, ~~Fuel shuffle in spent fuel pool.~~ ~~Plan to~~ conduct MSIV stroke test CPS 9031.10. Operators are in place to support the surveillance.

Event No.	Malf No.	Event Type*	Event Description
1	IC-4	RO-R	Reduce power to ~ ~~80~~ 75% w/ FCV to support MSIV stroke test.
2		BOP-N	Conduct MSIV stroke test (CPS 9031.~~01~~ 10)
3		RO-I	~~FWCS Master Level Controller Fail Low (~1 in/min). (Will work in manual.)~~ Rx water level Channel "A" fails to ~ 40"
4		BOP-I	Main turbine lube oil temperature controller failure causing high lube oil temperature.
5		C SRO-TS	~~Offgas Post-Treatment radiation monitor (PR035) failing high (isolates Offgas stack flow)~~ Report from Maintenance that Div 2 SX pump bearing has failed.
~~6~~ 7		BOP-C	Loss of ~~operating~~ "B" SA compressor & small IA leak.
~~7~~			~~Reducing power due to IA leak.~~ Not used
~~8~~ 6		RO-C	Condenser Emergency Overflow Valve (1CD030) Fails Open ~~CRD Auto Flow Control Valve (FCV) (FO02A) failing shut.~~
~~9~~ 8			One MSIV drifting off full open seat due to IA leak.
~~10~~ 9			One rod drift alarm due to IA leak.
~~11~~ 10		M	ATWS - hydraulic lock.
~~12~~ 11		C	SLC not inject.

* (N)ormal, (R)eactivity, (I)nstrument, (C)omponent, (M)ajor

Event No.: _1_ (Reactivity) Power Reduction to < ~~80~~ 75% with FCV in preparation for MSIV Stroke Test

Time	Position	Applicant's Actions or Behavior
	SRO	• CREW BRIEF ON REACTIVITY MANAGEMENT COMPLETED PRIOR TO CREW TAKING SHIFT. POWER DECREASE IAW CPS 3005.01, UNIT POWER CHANGES. • DIRECT RO TO REDUCE POWER BY LOWERING FLOW W/ FCV TO < ~~80~~%. 75%. Minimum FCV position is 45% open • NOTIFY CHEMISTRY OF POTENTIAL POWER CHANGE > 15%. • NOTE: ~950MWe = 100% = 2894MWth. • Notify Load Dispatcher of load drop.
	RO	REDUCE REACTOR POWER BY ADJUSTING RR FLOW VIA FCV OPERATION.
	BOP	MONITOR PLANT AS DIRECTED BY SRO.

Event No.: _2_ (Normal Evolution) CONDUCT MSIV STROKE TEST: NOTE - 1st inboard MSIV test will be completed without any problems.

Time	Position	Applicant's Actions or Behavior
	SRO	Implement CPS 9031.~~01~~ 10, Main Steam Line Isolation Valve Channel Functional AND DIRECT OPERATOR ACTIONS.
	BOP	VERIFY TEST PREREQUISITE CONDITIONS OBTAIN SHIFT SUP PERMISSION TO PERFORM TEST MSL A/B/C/D BYPASS SWITCH IN NORMAL ON 1H13-P601 NS4 A/B/C/D BYPASS SWITCH IN NORMAL ON 1H13-P661-664 NOTIFY STA OF GETARS TRIPS OF CHAN 147-154 PLACE MSL A INBD MSIV CONTROL SWITCH TO THE CLOSE POSITION. DEPRESS AND HOLD TEST PUSHBUTTON, MSL A INBD MSIV TEST. VERIFY BOTH RED AND GREEN LIGHTS ARE ON. ALARM DIV 1 OR 4 MSIV CL TRIP ANNUNCIATES. COMPUTER POINT B21-NC047 INDICATES TRIPPED (or Logic 1 State) AFTER ALARM IS RECEIVED RELEASE THE TEST PUSHBUTTON AND VERIFY RED LIGHT ON GREEN LIGHT OFF ALARM DIV 1 OR 4 MSIV CL TRIP CLEARS. COMPUTER POINT B21-NC047 INDICATES RESET (or Logic 0 State) PLACE THE MSL A INBD MSIV CONTROL SWITCH FOR MSIV 1B21-FO22A TO AUTO. PERFORM INDEPENDENT VERIFICATION OF SWITCH POSITION BEFORE BEGINNING "B" INBOARD MSIV. NOTE: THE STEPS FOR THE "B" INBOARD MSIV ARE THE SAME. Note => Some details added for clarification of actions taken by BOP.
	RO	MONITOR PLANT PARAMETERS AS DIRECTED BY SRO.
	CUE	When 2nd MSIV is being tested AND when directed by Chief Examiner, insert Event 3, FWCS MASTER LEVEL CONTROLLER (AUTO) LOW Failure (~ 1 INCH/MINUTE RAMP).

Event No.: _3_ (RO-I) Rx Water Level Channel "A" Fails to ~40." ~~FWCS MASTER LEVEL CONTROLLER SLOW FAILURE LOW (~ 1 in/min ramp). MANUAL CONTROL WILL WORK.~~ When 2nd inboard MSIV is being tested, then event 3 will be inserted

Time	Position	Applicant's Actions or Behavior * Actions Revised to Reflect New Instrument Failure
	CUE	FAIL ~~FWCS MASTER LEVEL CONTROLLER (AUTO) LOW (~ 1 INCH/MINUTE RAMP)~~ WHEN 2ND MSIV IS BEING TESTED.
	RO	Report RPV Level is slowly decreasing. RPV Low Level Alarm @ 30.8 " (Alarm window 5002-2Q) Take manual control of TDRFPs and restore level to ~ 36 inches IAW CPS 3103.01, Feedwater, Section 8.3.13, High/Low RPV Level.
	SRO	Directs BOP to stop MSIV testing. Directs RO to take manual control of TDRFPs and restore level to ~ 36 inches IAW CPS 3103.01, Feedwater, Section 8.3.13, High/Low RPV Level. Directs RO/BOP to review Annunciator Response Procedure for RPV Low Level Alarm @ 30.8 " (Alarm window 5002-2Q) Contacts Maintenance to prepare work order to troubleshoot.
	BOP	Monitor plant parameters as directed by SRO.
	CUE	After RPV level stabilized AND when directed by Chief Examiner, insert Event 4 - Main turbine LO hi temp.

Event No.: _4_ (BOP-I) MAIN TURBINE LUBE OIL TEMP CONTROLLER FAILURE: Control (in auto) fails causing high LO temperature. Manual Control will work.

Time	Position	Applicant's Actions or Behavior * Added More Details
	CUE	After RPV level stabilized AND when directed by Chief Examiner, insert Event 4 - turbine LO hi temp.
	BOP	Reports: High Turbine LO Temperature Alarm (normal is ~110 F) Determines Turbine LO Temperature Controller is not functioning in automatic. When directed, takes manual control and restores temperature to normal band.
	SRO	Directs BOP to determine cause of high temperature. Directs local area operator to investigate. Directs BOP to take manual control and restore temperature to normal band. Contacts Maintenance to prepare work order to troubleshoot.
	RO	Monitor plant parameters as directed by SRO.
	CUE	After temperature has stabilized AND when directed by Chief Examiner, insert Event 5 - Offgas Post-Treatment Rad Monitor fails high.

Event No.: _5_ (SRO-TS & C) ~~Offgas Post-Treatment Rad Monitor (PR035) Fails High. Offgas vent stack valve (N66FO60) will close.~~ Inoperable Div 2 SX Pump Failure

Time	Position	Applicant's Actions or Behavior
	CUE	After temperature has stabilized AND when directed by Chief Examiner, insert Event 5 - Offgas Post-Treatment Rad Monitor (PR035) fails high. Offgas vent stack valve (N66FO60) auto closes. NOTE - If FO60 remains closed of an extended period of time, main condenser vacuum will begin to decrease.
	BOP/RO	Report alarms: Window 5130-6D, Normal Offgas Flow Low Range Low (due to FO60 closed) Report that FO60 has shut. Report Process Rad Monitor PR035 reads off scale high and PR041 reads normal value for plant conditions. Bypass rad monitor and reopen Offgas vent stack valve, FO60, when directed. Actions revised to reflect new component failure.
	SRO	Refer to Offsite Dose Calculation Manual (OCDM) 3.9, Radioactive Gaseous Monitoring Instrumentation. Place the rad monitor in bypass and reopen the Offgas vent stack valve, FO60. Contact RP/Maintenance to troubleshoot.
	CUE	After FO60 has been reopened & SRO has made a determination on Offgas, AND when directed by Chief Examiner, insert Event 6, Loss of one service air compressor w/ SMALL leak in Instrument Air.

Event No.: ~~6~~ 7 (BOP-C) Loss of ~~one~~ "B" service air (SA) compressor and STANDBY SA compressor will not auto start. It will start manually. ~~Concurrent~~ After Standby Compressor started SMALL IA Leak.

Time	Position	Applicant's Actions or Behavior * Added/More Details
	CUE	After FO60 has been reopened & SRO has made a determination on Offgas, AND when directed by Chief Examiner, insert Event 6, Loss of one Service Air compressor w/ SMALL IA leak. (SA Compressor tripped on high vibs.) **DO NOT LET SA/IA HEADER PRESSURE DROP BELOW 70 PSIG.**
	BOP	Report Alarm Window 5041-1A, Auto Trip Pump/Motor (due to SA compressor trip) Report Alarm Windows (5041-5B to -5E) for low SA Header Pressure (RadWaste Bldg, Control Bldg, Aux/Fuel Bldg, Turbine Bldg) Monitor SA and IA header pressures. Standby SA Compressor should auto start at SA header pressure of 80 psig decreasing. THE STANDBY COMPRESSOR WILL **NOT** AUTO START. When Directed, start Standby SA Compressor. Monitor SA and IA header pressures. After compressor startup, report IA header pressure slowly decreasing.
	SRO	Refer to ARP 5041-1A and possibly to CPS 4004.01, Instrument Air Losses. Direct BOP to start standby SA compressor and monitor SA &IA header pressures. If IA header pressure lowers to 60 psig & can not be restored, Mode Switch to Shutdown. Direct RO to monitor SDV rod block OR control rods begin to drift. If RO identifies these indications, Mode Switch to Shutdown. Direct Maintenance to initiate work order and troubleshoot/repair. Direct local area operators to check SA/IA headers for leaks.
	RO	Monitor SDV rod block OR control rods begin to drift. Monitor other plant parameters as directed by SRO.
	CREW	Local Area operator reports small non-isolable IA header leak.

Event No.: 7 ~~Power Reduction w/ FCV to Due to IA Small Header Leak~~ Deleted

Time	Position	Applicant's Actions or Behavior
	CUE	**DO NOT LET SA/IA HEADER PRESSURE DROP BELOW 70 PSIG.**
	SRO	Direct controlled plant shut down IAW CPS 3006.01, Unit Shutdown. Direct BOP to start standby SA compressor and monitor SA &IA header pressures. If IA header pressure lowers to 60 psig & can not be restored, Mode Switch to Shutdown. Direct RO to monitor SDV rod block OR control rods begin to drift. If RO identifies these indications, Mode Switch to Shutdown. NOTE- All SA ring headers & IA ring header in RadWaste & Control Bldg will auto isolate @ 70 psig. This should not cause a scram. Notify Chemistry of power change > 15% & Load Dispatch of unit going offline. Direct BOP to maintain RPV level control & coordinate w/ RO to maintain level.
	RO	Reduce reactor power by adjusting recirc flow via FCV operation. Coordinate w/ BOP to maintain RPV level in program band.
	BOP	Control RPV level in manual & Coordinate w/ RO to maintain RPV level in program band.
	CUE	After flow has been reduced using one FCV AND when directed by Chief Examiner, insert Event 8, CRD Auto Flow control valve fails shut. **DO NOT LET SA/IA HEADER PRESSURE DROP BELOW 70 PSIG.**

Event No.: ~~8~~ 6 (RO-C) ~~CRD Auto Flow Control Valve (FO02A) Fails Shut in Auto. (Will work in manual control)~~ Cond. Emergency overflow Valve (CD020) Fails open. RO can take manual control.

Time	Position	Applicant's Actions or Behavior
	CUE	After flow has been reduced using one FCV AND when directed by Chief Examiner, insert Event ~~8~~ 6, ~~CRD Flow control valve fails shut.~~ **DO NOT LET SA/IA HEADER PRESSURE DROP BELOW 70 PSIG.**
	RO	Stops power reduction. Reports CRD FCV failed shut. When directed, places CRD FCV in manual and restores CRD system pressure to normal (~ 250 psid above Rx pressure) Actions revised to reflect new component failure.
	SRO	Directs power reduction to stop. Refer to CPS 3304.01, CRD Hydraulic System. Directs RO to place CRD FCV in manual and restores CRD system pressure to normal. After CRD system parameters back to normal, continue with power reduction.
	BOP	Maintain RPV level & monitor plant systems as directed.
	CUE	After CRD pressure back to normal AND when directed by Chief examiner, insert Event 9 - 1A Inboard MSIV drifting off open seat (due to IA leak). **DO NOT LET SA/IA HEADER PRESSURE DROP BELOW 70 PSIG.**

Event No.: ~~9~~ 8 (C) 1A Inboard MSIV drifting off open seat (due to IA leak).

Time	Position	Applicant's Actions or Behavior * Added details
	CUE	After CRD pressure back to normal AND when directed by Chief examiner, insert Event ~~9~~ 8 1A Inboard MSIV drifting off open seat (due to IA leak). **DO NOT LET SA/IA HEADER PRESSURE DROP BELOW 70 PSIG.**
	RO/ BOP	Report 1A Inboard MSIV not full open. Verify other MSIVs full open. Verify other equipment effected by SA/IA is operating normally. When directed, place control switch for 1A Inboard MSIV to OFF.
	SRO	Refer to CPS 4004.01, Instrument Air Losses, step 4.2 (IF MSIVs close due to loss of IA, THEN place control switch in OFF). Direct RO/BOP to verify other equipment effected by SA/IA is operating normally. (i.e. control rods, scram valves, ADS, Offgas Vent discharge valve, etc..) NOTE: SRO may direct rapid shutdown (i.e. Mode Switch to Shutdown)
	CUE	After control switch for 1A Inboard MSIV is OFF AND when directed by Chief examiner, insert Event ~~10~~ 9 two rods drift (due to IA leak); Event ~~11~~ 10 ATWS hydraulic lock; and Event ~~12~~ 11 SLC not inject. **DO NOT LET SA/IA HEADER PRESSURE DROP BELOW 70 PSIG.**

Events: 9 10, 11, ~~& 12~~ (C, M, C) Event ~~10~~ 9, two rods drift (due to IA leak);
Event ~~11~~ 10, ATWS hydraulic lock; and Event ~~12~~ 11, SLC not inject.

Time	Position	Applicant's Actions or Behavior * Added details
	CUE	After control switch for 1A Inboard MSIV is OFF AND when directed by Chief examiner, insert Event ~~10~~ 9, two rods drift (due to IA leak); Event ~~11~~ 10, ATWS hydraulic lock; and Event ~~12~~ 11, SLC not inject. **DO NOT LET SA/IA HEADER PRESSURE DROP BELOW 70 PSIG.**
	RO	Report rod drift alarms. (Rod Drift Annunciator Window 5006-4G)
	SRO	Refer to CPS 4007.02, Inadvertent Rod Movement. Refer to CPS 4004.01, Instrument Air Losses. Direct RO to scram the Rx (Mode Switch to Shutdown) due to rod drift w/ IA Leak.
	RO	When directed, places Mode Switch in Shutdown. Reports rods did not insert & Shutdown Criteria not met. Shutdown Criteria: All rods are in to at least 02; OR no more than one rod out past 02, with all other rods in at 00; OR a qualified Rx Eng has determined the Rx will remain shutdown under all conditions without boron. When directed, Insert Manual scram (it won't work). When directed, Initiate ARI (it won't work).
	SRO	Enter EOP-1 (RPV Control) & transitions to EOP-1A (ATWS RV Control) Direct RO to insert manual scram & ARI. Obtain RPV & Containment parameters from RO/BOP. Direct RO/BOP to maintain RPV level in manual. (May get RCIC & HPCS startup on Level 2 (-45"). RPV Pressure control w/ BPVs & auto SRVs.
	BOP	Monitor plant parameters as directed by SRO. Maintain RPV level in manual.

Events: 10 & 11 ~~& 12~~ (Continued) Event 10 ~~11~~, ATWS hydraulic lock; and Event 11 ~~12~~, SLC not inject.

Time	Position	Applicant's Actions or Behavior * Added details
	SRO	Direct RO/BOP to initiate SLC. (It will not work) Direct RO to manually insert rods (It will work), IAW CPS 4411.08, ALTERNATE CONTROL ROD INSERTION. Direct RO/BOP to maintain RPV level in manual. (May get RCIC & HPCS startup on Level 2 (-45").
	RO	When directed, manually insert rods IAW CPS 4411.08. Report rods are being inserted.
	RO/ BOP	When directed, initiate SLC. Report SLC pumps running, continuity lights ON, no injection (SLC discharge pressure much > RCS, power not decreasing, and tank level not decreasing). Maintain RPV level in manual. (May get RCIC & HPCS startup Level 2.)

Events: 11 ~~& 12~~ (Continued) Event ~~11~~, ATWS hydraulic lock; and Event ~~12~~, SLC not inject.

Time	Position	Applicant's Actions or Behavior Added details
	CUE	When power < 5% due to RPV level drop, restore scram function and insert all rods.
	SRO	EOP-1A Level: Reduce level to reduce power to < 5%. Terminate & prevent injection (except CRD & SLC) Reduce level & maintain level Band C [-162" (TAF) to XX?? (level at beginning of step)] Let level drop until: Power < 5% OR Level @ -130" OR All SRVs closed AND D/W press stays below 1.68 psig.
	RO	Continues to drive rods. Reports when all rods are inserted.
	CUE	End Scenario - ~~All~~ rods are being inserted, RPV level and pressure are ~~stable~~ under control, AND when directed by Chief examiner.

Extra Comment Page (if needed)

Time	Position	Applicant's Actions or Behavior

Facility: Clinton Scenario No.: 1 Op-Test No.: 2000301

Examiners: _____ Operators: _____

Objectives: Exercise EOP-1A ATWS RPV Control. Goal is to have operators reduce power < 5% with level control. Evaluate applicants while: 1) reducing power with FCV to support the MSIV stroke test, 2) conducting MSIV stroke test, 3) responding to FWCS Master Level Controller fail low (~ 1 in/min), 4) respondin e oil temperature, 5) respondi s stack flow), 6) respondi (IA) leak, 7) reducing power du 9) responding to one MSIV drif e to IA leak, 11) respc

Clean Copy of Scenario 1.

Approved Prior to Validation Wk.

Initial Co t of service. Fuel shuffle in

Turnover: ift. Div I DG in out of service - has been out of service fc DRFP is out of service - uct MSIV stroke test CPS 903

Event No.	No.	Type	Description
1		RO-R	Reduce power to ~ 80% w/ FCV to support MSIV stroke test.
2		BOP-N	Conduct MSIV stroke test (CPS 9031.01)
3		RO-I	FWCS Master Level Controller Fail Low (~1 in/min). (Will work in manual.)
4		BOP-I	Main turbine lube oil temperature controller failure causing high lube oil temperature.
5		C SRO-TS	Offgas Post-Treatment radiation monitor (PR035) failing high (isolates Offgas stack flow)
6		BOP-C	Loss of operating SA compressor & small IA leak.
7			Reducing power due to IA leak.
8		RO-C	CRD Auto Flow Control Valve (FCV) (FO02A) failing shut.
9			One MSIV drifting off full open seat due to IA leak.
10			One rod drift alarm due to IA leak.
11		M	ATWS - hydraulic lock.
12		C	SLC not inject.

* (N)ormal, (R)eactivity, (I)nstrument, (C)omponent, (M)ajor

Event No.: _1_ (Reactivity) Power Reduction to < 80% with FCV in preparation for MSIV Stroke Test

Time	Position	Applicant's Actions or Behavior
	SRO	• CREW BRIEF ON REACTIVITY MANAGEMENT COMPLETED PRIOR TO CREW TAKING SHIFT. POWER DECREASE IAW CPS 3005.01, UNIT POWER CHANGES. • DIRECT RO TO REDUCE POWER BY LOWERING FLOW W/ FCV TO < 80%. • NOTIFY CHEMISTRY OF POTENTIAL POWER CHANGE > 15%. • NOTE: ~950MWe = 100% = 2894MWth. • Notify Load Dispatcher of load drop.
	RO	REDUCE REACTOR POWER BY ADJUSTING RR FLOW VIA FCV OPERATION.
	BOP	MONITOR PLANT AS DIRECTED BY SRO.

Event No.: _2_ (Normal Evolution) CONDUCT MSIV STROKE TEST: NOTE - 1st inboard MSIV test will be completed without any problems.

Time	Position	Applicant's Actions or Behavior
	SRO	Implement CPS 9031.01, Main Steam Line Isolation Valve Channel Functional AND DIRECT OPERATOR ACTIONS.
	BOP	VERIFY TEST PREREQUISITE CONDITIONS OBTAIN SHIFT SUP PERMISSION TO PERFORM TEST MSL A/B/C/D BYPASS SWITCH IN NORMAL ON 1H13-P601 NS4 A/B/C/D BYPASS SWITCH IN NORMAL ON 1H13-P661-664 NOTIFY STA OF GETARS TRIPS OF CHAN 147-154 PLACE MSL A INBD MSIV CONTROL SWITCH TO THE CLOSE POSITION. DEPRESS AND HOLD TEST PUSHBUTTON, MSL A INBD MSIV TEST. VERIFY BOTH RED AND GREEN LIGHTS ARE ON. ALARM DIV 1 OR 4 MSIV CL TRIP ANNUNCIATES. COMPUTER POINT B21-NC047 INDICATES TRIPPED (or Logic 1 State) AFTER ALARM IS RECEIVED RELEASE THE TEST PUSHBUTTON AND VERIFY RED LIGHT ON GREEN LIGHT OFF ALARM DIV 1 OR 4 MSIV CL TRIP CLEARS. COMPUTER POINT B21-NC047 INDICATES RESET (or Logic 0 State) PLACE THE MSL A INBD MSIV CONTROL SWITCH FOR MSIV 1B21-FO22A TO AUTO. PERFORM INDEPENDENT VERIFICATION OF SWITCH POSITION BEFORE BEGINNING "B" INBOARD MSIV. NOTE: THE STEPS FOR THE "B" INBOARD MSIV ARE THE SAME.
	RO	MONITOR PLANT PARAMETERS AS DIRECTED BY SRO.
	CUE	When 2nd MSIV is being tested AND when directed by Chief Examiner, insert Event 3, FWCS MASTER LEVEL CONTROLLER (AUTO) LOW Failure (~ 1 INCH/MINUTE RAMP).

Event No.: _3_ (RO-I) FWCS MASTER LEVEL CONTROLLER SLOW FAILURE LOW (~ 1 in/min ramp). MANUAL CONTROL WILL WORK. When 2nd inboard MSIV is being tested, then event 3 will be inserted

Time	Position	Applicant's Actions or Behavior
	CUE	FAIL FWCS MASTER LEVEL CONTROLLER (AUTO) LOW (~ 1 INCH/MINUTE RAMP) WHEN 2ND MSIV IS BEING TESTED.
	RO	Report RPV Level is slowly decreasing. RPV Low Level Alarm @ 30.8 " (Alarm window 5002-2Q) Take manual control of TDRFPs and restore level to ~ 36 inches IAW CPS 3103.01, Feedwater, Section 8.3.13, High/Low RPV Level.
	SRO	Directs BOP to stop MSIV testing. Directs RO to take manual control of TDRFPs and restore level to ~ 36 inches IAW CPS 3103.01, Feedwater, Section 8.3.13, High/Low RPV Level. Directs RO/BOP to review Annunciator Response Procedure for RPV Low Level Alarm @ 30.8 " (Alarm window 5002-2Q) Contacts Maintenance to prepare work order to troubleshoot.
	BOP	Monitor plant parameters as directed by SRO.
	CUE	After RPV level stabilized AND when directed by Chief Examiner, insert Event 4 - Main turbine LO hi temp.

Event No.: _4_ (BOP-I) MAIN TURBINE LUBE OIL TEMP CONTROLLER FAILURE: Control (in auto) fails causing high LO temperature. Manual Control will work.

Time	Position	Applicant's Actions or Behavior
	CUE	After RPV level stabilized AND when directed by Chief Examiner, insert Event 4 - turbine LO hi temp.
	BOP	Reports: High Turbine LO Temperature Alarm (normal is ~110 F) Determines Turbine LO Temperature Controller is not functioning in automatic. When directed, takes manual control and restores temperature to normal band.
	SRO	Directs BOP to determine cause of high temperature. Directs local area operator to investigate. Directs BOP to take manual control and restore temperature to normal band. Contacts Maintenance to prepare work order to troubleshoot.
	RO	Monitor plant parameters as directed by SRO.
	CUE	After temperature has stabilized AND when directed by Chief Examiner, insert Event 5 - Offgas Post-Treatment Rad Monitor fails high.

Event No.: _5_ (SRO-TS & C) Offgas Post-Treatment Rad Monitor (PR035) Fails High. Offgas vent stack valve (N66FO60) will close.

Time	Position	Applicant's Actions or Behavior
	CUE	After temperature has stabilized AND when directed by Chief Examiner, insert Event 5 - Offgas Post-Treatment Rad Monitor (PR035) fails high. Offgas vent stack valve (N66FO60) auto closes. NOTE - If FO60 remains closed of an extended period of time, main condenser vacuum will begin to decrease.
	BOP/RO	Report alarms: Window 5130-6D, Normal Offgas Flow Low Range Low (due to FO60 closed) Report that FO60 has shut. Report Process Rad Monitor PR035 reads off scale high and PR041 reads normal value for plant conditions. Bypass rad monitor and reopen Offgas vent stack valve, FO60, when directed.
	SRO	Refer to Offsite Dose Calculation Manual (OCDM) 3.9, Radioactive Gaseous Monitoring Instrumentation. Place the rad monitor in bypass and reopen the Offgas vent stack valve, FO60. Contact RP/Maintenance to troubleshoot.
	CUE	After FO60 has been reopened & SRO has made a determination on Offgas, AND when directed by Chief Examiner, insert Event 6, Loss of one service air compressor w/ SMALL leak in Instrument Air.

Event No.: _6_ (BOP-C) Loss of one service air (SA) compressor and STANDBY SA compressor will not auto start. It will start manually. Concurrent SMALL IA Leak.

Time	Position	Applicant's Actions or Behavior
	CUE	After FO60 has been reopened & SRO has made a determination on Offgas, AND when directed by Chief Examiner, insert Event 6, Loss of one Service Air compressor w/ SMALL IA leak. (SA Compressor tripped on high vibs.) **DO NOT LET SA/IA HEADER PRESSURE DROP BELOW 70 PSIG.**
	BOP	Report Alarm Window 5041-1A, Auto Trip Pump/Motor (due to SA compressor trip) Report Alarm Windows (5041-5B to -5E) for low SA Header Pressure (RadWaste Bldg, Control Bldg, Aux/Fuel Bldg, Turbine Bldg) Monitor SA and IA header pressures. Standby SA Compressor should auto start at SA header pressure of 80 psig decreasing. THE STANDBY COMPRESSOR WILL **NOT** AUTO START. When Directed, start Standby SA Compressor. Monitor SA and IA header pressures. After compressor startup, report IA header pressure slowly decreasing.
	SRO	Refer to ARP 5041-1A and possibly to CPS 4004.01, Instrument Air Losses. Direct BOP to start standby SA compressor and monitor SA &IA header pressures. If IA header pressure lowers to 60 psig & can not be restored, Mode Switch to Shutdown. Direct RO to monitor SDV rod block OR control rods begin to drift. If RO identifies these indications, Mode Switch to Shutdown. Direct Maintenance to initiate work order and troubleshoot/repair. Direct local area operators to check SA/IA headers for leaks.
	RO	Monitor SDV rod block OR control rods begin to drift. Monitor other plant parameters as directed by SRO.
	CREW	Local Area operator reports small non-isolable IA header leak.

Event No.: _7_ Power Reduction w/ FCV to Due to IA Small Header Leak		
Time	Position	Applicant's Actions or Behavior
	CUE	**DO NOT LET SA/IA HEADER PRESSURE DROP BELOW 70 PSIG.**
	SRO	Direct controlled plant shut down IAW CPS 3006.01, Unit Shutdown. Direct BOP to start standby SA compressor and monitor SA &IA header pressures. If IA header pressure lowers to 60 psig & can not be restored, Mode Switch to Shutdown. Direct RO to monitor SDV rod block OR control rods begin to drift. If RO identifies these indications, Mode Switch to Shutdown. NOTE- All SA ring headers & IA ring header in RadWaste & Control Bldg will auto isolate @ 70 psig. This should not cause a scram. Notify Chemistry of power change > 15% & Load Dispatch of unit going offline. Direct BOP to maintain RPV level control & coordinate w/ RO to maintain level.
	RO	Reduce reactor power by adjusting recirc flow via FCV operation. Coordinate w/ BOP to maintain RPV level in program band.
	BOP	Control RPV level in manual & Coordinate w/ RO to maintain RPV level in program band.
	CUE	After flow has been reduced using one FCV AND when directed by Chief Examiner, insert Event 8, CRD Auto Flow control valve fails shut. **DO NOT LET SA/IA HEADER PRESSURE DROP BELOW 70 PSIG.**

Event No.: _8_ (RO-C) CRD Auto Flow Control Valve (FO02A) Fails Shut in Auto. (Will work in manual control)

Time	Position	Applicant's Actions or Behavior
	CUE	After flow has been reduced using one FCV AND when directed by Chief Examiner, insert Event 8, CRD Flow control valve fails shut. **DO NOT LET SA/IA HEADER PRESSURE DROP BELOW 70 PSIG.**
	RO	Stops power reduction. Reports CRD FCV failed shut. When directed, places CRD FCV in manual and restores CRD system pressure to normal (~ 250 psid above Rx pressure)
	SRO	Directs power reduction to stop. Refer to CPS 3304.01, CRD Hydraulic System. Directs RO to place CRD FCV in manual and restores CRD system pressure to normal. After CRD system parameters back to normal, continue with power reduction.
	BOP	Maintain RPV level & monitor plant systems as directed.
	CUE	After CRD pressure back to normal AND when directed by Chief examiner, insert Event 9 - 1A Inboard MSIV drifting off open seat (due to IA leak). **DO NOT LET SA/IA HEADER PRESSURE DROP BELOW 70 PSIG.**

Event No.: _9_ (C) 1A Inboard MSIV drifting off open seat (due to IA leak).

Time	Position	Applicant's Actions or Behavior
	CUE	After CRD pressure back to normal AND when directed by Chief examiner, insert Event 9 - 1A Inboard MSIV drifting off open seat (due to IA leak).**DO NOT LET SA/IA HEADER PRESSURE DROP BELOW 70 PSIG.**
	RO/ BOP	Report 1A Inboard MSIV not full open. Verify other MSIVs full open. Verify other equipment effected by SA/IA is operating normally. When directed, place control switch for 1A Inboard MSIV to OFF.
	SRO	Refer to CPS 4004.01, Instrument Air Losses, step 4.2 (IF MSIVs close due to loss of IA, THEN place control switch in OFF). Direct RO/BOP to verify other equipment effected by SA/IA is operating normally. (i.e. control rods, scram valves, ADS, Offgas Vent discharge valve, etc..) NOTE: SRO may direct rapid shutdown (i.e. Mode Switch to Shutdown)
	CUE	After control switch for 1A Inboard MSIV is OFF AND when directed by Chief examiner, insert Event 10, two rods drift (due to IA leak); Event 11, ATWS hydraulic lock; and Event 12, SLC not inject. **DO NOT LET SA/IA HEADER PRESSURE DROP BELOW 70 PSIG.**

Events: 10, 11, & 12 (C, M, C) Event 10, two rods drift (due to IA leak); Event 11, ATWS hydraulic lock; and Event 12, SLC not inject.

Time	Position	Applicant's Actions or Behavior
	CUE	After control switch for 1A Inboard MSIV is OFF AND when directed by Chief examiner, insert Event 10, two rods drift (due to IA leak); Event 11, ATWS hydraulic lock; and Event 12, SLC not inject. **DO NOT LET SA/IA HEADER PRESSURE DROP BELOW 70 PSIG.**
	RO	Report rod drift alarms. (Rod Drift Annunciator Window 5006-4G)
	SRO	Refer to CPS 4007.02, Inadvertent Rod Movement. Refer to CPS 4004.01, Instrument Air Losses. Direct RO to scram the Rx (Mode Switch to Shutdown) due to rod drift w/ IA Leak.
	RO	When directed, places Mode Switch in Shutdown. Reports rods did not insert & Shutdown Criteria not met. Shutdown Criteria: All rods are in to at least 02; OR no more than one rod out past 02, with all other rods in at 00; OR a qualified Rx Eng has determined the Rx will remain shutdown under all conditions without boron. When directed, Insert Manual scram (it won't work). When directed, Initiate ARI (it won't work).
	SRO	Enter EOP-1 (RPV Control) & transitions to EOP-1A (ATWS RV Control) Direct RO to insert manual scram & ARI. Obtain RPV & Containment parameters from RO/BOP. Direct RO/BOP to maintain RPV level in manual. (May get RCIC & HPCS startup on Level 2 (-45"). RPV Pressure control w/ BPVs & auto SRVs.
	BOP	Monitor plant parameters as directed by SRO. Maintain RPV level in manual.

Events: 11 & 12 (Continued) Event 11, ATWS hydraulic lock; and Event 12, SLC not inject.		
Time	Position	Applicant's Actions or Behavior
	SRO	Direct RO/BOP to initiate SLC. (It will not work) Direct RO to manually insert rods (It will work), IAW CPS 4411.08, ALTERNATE CONTROL ROD INSERTION. Direct RO/BOP to maintain RPV level in manual. (May get RCIC & HPCS startup on Level 2 (-45").
	RO	When directed, manually insert rods IAW CPS 4411.08. Report rods are being inserted.
	RO/ BOP	When directed, initiate SLC. Report SLC pumps running, continuity lights ON, no injection (SLC discharge pressure much > RCS, power not decreasing, and tank level not decreasing). Maintain RPV level in manual. (May get RCIC & HPCS startup Level 2.)

Events: 11 & 12 (Continued) Event 11, ATWS hydraulic lock; and Event 12, SLC not inject.		
Time	Position	Applicant's Actions or Behavior
	CUE	When power < 5% due to RPV level drop, restore scram function and insert all rods.
	SRO	EOP-1A Level: Reduce level to reduce power to < 5%. Terminate & prevent injection (except CRD & SLC) Reduce level & maintain level Band C [-162" (TAF) to XX?? (level at beginning of step)] Let level drop until: Power < 5% OR Level @ -130" OR All SRVs closed AND D/W press stays below 1.68 psig.
	RO	Continues to drive rods. Reports when all rods are inserted.
	CUE	End Scenario - All rods inserted, RPV level and pressure are stable, AND when directed by Chief examiner.

Extra Comment Page (if needed)

Time	Position	Applicant's Actions or Behavior

Changes Made to Scenario 2 During Validation Week.

Initial Event No. 2: (Normal Evolution) HPCS Surveillance (Tank to Tank), in accordance with CPS 2801.00D002.

Revised Event No. 2: HPCS Pump Operability / Water Leg Pump Check Valves Test (Tank to Tank) per CPS 9051.01, step 8.3.

Basis for change:

- Based on the performance by the operating crew during validation week, the Initial Surveillance was lengthy. The Revised Surveillance was shorter and still provided an adequate number of steps for the NRC examiner to adequately evaluate the Applicant's performance. The NRC and licensee agreed to revise the Surveillance.

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Initial Event No. 3: (RO - I) FWLCS Setpoint Setdown Logic Failure (causing it to actuate). (The setpoint initially increases to 40" to 10 sec. and then lowers to 18").

Revised Event (No. 8): (RO-I) FWLCS Master Level Controller Failure to + 40."

Bases for changes:

- The simulator software was unable to adequately simulate a FWLCS Setpoint Setdown Logic Failure. The NRC examiners were unable to adequately evaluate the Applicants' performance. The NRC and licensee agreed to revise the instrument failure. The NRC and licensee agreed that the revised instrument failure was adequate to evaluate the Applicant's performance.
- The placement of the Event in the Scenario was modified to provide better pacing in the Scenario.

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New Event No. 3: (SRO-TS) HPCS Pump Breaker Failure (smoke from cubicle) when pump is secured. **Note to Examiner** - This is NOT a BOP/RO component failure.

Bases for changes:

- This component failure evaluated the SRO Applicant's knowledge and use of TS.
- This component failure reduced the number of high pressure injection sources available during the major event. The NRC and licensee agreed to insert the component failure. The NRC and licensee agreed that the revised component failure was adequate to evaluate the Applicant's performance.

****

Initial Event No. 4: (BOP - I) HPCS pump discharge flow instrument for minimum flow valve (FO-12) fails low and FO-12 will auto open and will not remain closed.

Revised Event (No. 5): (BOP-I) CRD Hydraulic Flow Controller Fails in Auto (CRD FCV goes shut)

Bases for changes:

- The simulator software was unable to adequately simulate the HPCS pump discharge flow instrument for minimum flow valve (FO-12) fails low and FO-12 will auto open and will not remain closed. The NRC and licensee agreed to revise the instrument failure.

Changes Made to Scenario 2 During Validation Week.

The NRC and licensee agreed that the revised instrument failure was adequate to evaluate the Applicant's performance.

- The placement of the Event in the Scenario was modified to provide better pacing in the Scenario.

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Initial Event No. 5: (SRO - TS) (LPCS/RHR-A Water Leg Pump Failure (Low discharge pressure due to leak).

Revised Event (No. 6) (SRO - TS) (LPCS/RHR-A Water Leg Pump Failure (Low discharge pressure due to leak).

Basis for change:

- The placement of the Event in the Scenario was modified to provide better pacing in the Scenario.

****

Initial Event No.6: Reduce power due to TS required shutdown. The power reduction was removed from the scenario.

Basis for change:

- Based on the performance of the operating crew during validation week, the power reduction was not started in a reasonable amount of time. The NRC and licensee agreed that the power reduction (and second reactivity change) was not needed to evaluate the Applicants' performances.

****

Initial Event No. 7: (RO - C) Rx Recirculation A-FCV Drifts Open.

Revised Event (No. 4): (RO - C) Rx Recirculation A-FCV Drifts Open.

Basis for change:

- The placement of the Event in the Scenario was modified to provide better pacing in the Scenario.

****

New Event No. 7: (BOP-C) Trip of the "B: CCW Pump.

Basis for change:

- The initial BOP-C was three SRVs opening after a scram and will not automatically close when pressure is below the reclose setpoint. The BOP would determine that one of the SRVs would close but the other two were mechanically stuck open. The two stuck open SRVs would constitute a LOCA. The stuck open SRVs would heat the suppression pool and drive the Applicants towards an emergency depressurization due to high pool temperature. Due to the large mass of water in the suppression pool for a BWR-6 design, having two open SRVs would not increase pool temperature (or increase any secondary containment parameters) fast enough to require an emergency depressurization (in a timely manner). Additionally, the two open SRVs would reduce pressure so quickly as to negate the need for to emergency depressurize. The NRC and licensee agreed to revise the component failure. The NRC and licensee agreed

that the revised component failure was adequate to evaluate the Applicant's performance.

****

Initial Event No. 8: MSIV rapid closure & subsequent Rx scram. This Event was removed from the scenario.

Basis for change:

- The event was removed because the initial major event (two stuck open SRVs/LOCA) was changed. (See New Event No. 7 (above) for details.)

****

Initial Event No. 9: (BOP-C & Major) Three SRVs open at scram and will not auto close, one will close manually. The remaining two are mechanically stuck open.

Revised Event No. 9: (Major) Earthquake with a) MSIVs shutting, b) Condensate System Leak, c) Rx Recirculation system leak, and d) leak from Drywell into Containment.

Basis for Change:

- The objective of the scenario was to evaluate the Applicants' performance and to exercise EOP - 3, "Emergency Depressurization," due to loss of high pressure injection and high temperatures in suppression pool (two stuck open SRVs). Since the two stuck open SRVs would not increase pool temperature (or increase any secondary containment parameters) fast enough to require an emergency depressurization (in a timely manner), the initial major event was changed to an earthquake with complications (MSIVs shutting, Condensate System Leak, Rx Recirculation system leak, and leak from Drywell into Containment). The complications would create a set of plant conditions which would require the Applicants to conduct an emergency depressurization. The NRC and licensee agreed to revise the component failures. The NRC and licensee agreed that the revised component failures were adequate to evaluate the Applicants' performances.

Facility: Clinton Scenario No.: 2 Op-Test No.: 2000301

Examiners: _____ Operators: _____

Multiple changes. See Event Description Below.

Objectives: Exercise EOP - 3, "Emergency Depressurization," due to ~~loss of high pressure injection and high temperatures in suppression pool (two stuck open SRVs).~~ Not been able to maintain level above TAF. Evaluate applicants while: 1) shifting recirc pumps to fast, 2) conducting HPCS surveillance, 3) ~~responding to FWLCS setpoint setdown logic failure,~~ HPCS Brk failure 4) responding to ~~HPCS pump discharge flow instrument for mini flow valve failure,~~ "A" FCV Recirc drift open ~~5)~~ 6) responding to LPCS/RHR-A water leg pump leak, ~~6) reducing power due TS shutdown,~~ 7) responding to recirc FCV "A" drift open, 8) responding to MISV rapid closure & scram, ~~9) responding to three SRVs not auto close (two will not close)~~, 10) responding to RCIC overspeed trip during auto (or manual) start (not reset), and 11) responding to ADS Logic Failure (valves will open manually).

Initial Conditions: ~35% power. Power was reduced to repair main condenser circulating water tube leakage. ~~Div I DG OOS - maintenance is replacing a leaking relief valve on the air start system. It has been out of service for 1 day and is expected to be tested towards the end of this shift.~~ The MDRFP is out of service - motor bearing replacement. New Fuel ~~shuffle in spent fuel pool.~~ is being loaded into the new fuel vault storage.

Turnover: Unit is at ~ 35%. Continue power increase & shift recirc. pumps to fast. Step 8.4.3, CPS 3004.01 completed. After pump shift and plant is stable, conduct HPCS Pump Operability Test ~~surveillance (tank to tank)~~ CPS ~~2801.00D002~~ 9051.01. Operators are in place to support surveillance. Engineering identified a potential problem with HPCS flow data during last surveillance and wants to re-verify the data. ~~Div I DG out of service - maintenance is replacing a leaking relief valve on the air start system. Div I DG has been OOS for 1 day and is expected to be tested near the end of this shift.~~ The MDRFP is OOS - motor bearing replacement. New Fuel ~~shuffle in spent fuel pool.~~ is being loaded into new fuel storage vault. Planned activity is HPCS surveillance.

Event No.	Malf. No.	Event Type*	Event Description
1		RO-R	Shift recirculation pumps to fast.
2		BOP-N	HPCS surveillance (tank to tank) CPS ~~2801.00D002~~ 9051.01, Section 8.3
~~3~~ 8		RO-I	FWLCS ~~setpoint setdown logic fails, causing it to actuate.~~ Master Level Controller Fails to +40"
~~4~~ 5		BOP-I	~~HPCS pump discharge flow instrument for mini flow valve (FO12) fails low. Valve opens when pump is operating.~~ CRD Hydraulic Flow Controller Fails in Auto. FCV Shuts. Will work in Manual
~~5~~ 6		C SRO-TS	LPCS/RHR-A water leg pump failure (low discharge pressure due to leak).
3 6		C SRO-TS	~~Reducing power due to TS shutdown.~~ HPCS Pump Brk Failure. Identified when HPCS pump is stopped.
~~7~~ 4		RO-C	Rx recirculation "A" flow control valve (FCV) drift open.
~~8~~ 7 9		~~C Bop-C~~ M	~~MSIV rapid closure - reactor scram.~~ Earthquake w/ other subsequent failures.
~~9~~ 7		~~BOP-C & M~~ Bop-C	~~Three SRVs not auto close. (Two will not close)~~ Trip of "B" CCW Pump. (Manually start "A" CCW Pump)
10		C	RCIC overspeed trip during auto (or manual) start (not reset).
11		C	ADS Logic Failure (valves will open manually)

* (N)ormal, (R)eactivity, (I)nstrument, (C)omponent, (M)ajor

Event No.: 1 (RO - Reactivity Change) Shift Recirculation Pumps to Fast Speed.		
Time	Position	Applicant's Actions or Behavior
	SRO	Conduct crew brief. The Reactivity Management brief was completed prior to the crew taking the shift. Transfer pumps to fast IAW CPS 3302.01, Reactor Recirculation, step 8.1.2. Verify Flow Control Line ≥ 60%. Direct local operators to bypass the FW Flow FCV cavitation / RR pump downshift interlock for each pump. Direct RO/BOP to Reset/Verify Reset FCV & pump interlocks. Direct FCV to be positioned at minimum position for pump being shifted to fast. Direct the other FCV be adjusted to maintain Rx power constant and Feedwater flow ≥ 3.13 mlbm/hr (~ 29.4 % RTP). Make notifications: RP of potential change in rad levels, Security the perimeter lighting may be effected, plant wide Gaitronics announcement. Direct RO to transfer pumps to fast speed (one at a time).
	RO	Verify Flow Control Line ≥ 60% using computer. Verify Annunciator 5003-4C/4J, RECIRC MTR A (B) AUTO TRIP OR XFER TO LS window has alarmed when interlock has been bypassed. When directed, Reset/Verify Reset RCV & pump interlocks. When directed, position the RCV at minimum for pump being shifted to fast. When directed, adjusted the other FCV to maintain Rx power constant and Feedwater flow ≥ 3.13 mlbm/hr (~ 29.4 % RTP). When directed, shift pumps to fast speed (one at a time).
	BOP	Monitor plant parameters as directed by SRO. When directed, adjusted the other FCV to maintain Rx power constant and Feedwater flow ≥ 3.13 mlbm/hr (~ 29.4 % RTP). When directed, monitor pump seal key parameters.

Event No: 1 (RO-Reactivity Change) Shift Recirculation Pumps to Fast Speed. **(CONTINUED)**		
Time	Position	Applicant's Actions or Behavior
	SRO	After pumps shifted to fast, direct STA to remove the substitute value from and restore points B33NA003 and/or 004, RR Pump A (B) Motor Power for the RR pump transfer to fast speed. Direct increase in power w/ FCV to between 35 & 39% to clear the cavitation interlocks. Direct RO/BOP to verify cavitation interlocks are cleared.
	RO	When directed, increase in power w/ FCV to between 35 & 39% to clear the cavitation interlocks. When directed, verify cavitation interlocks are cleared.
	BOP	Monitor plant parameters as directed by SRO.

Event No.: 2 - (Normal Evolution) HPCS Surveillance (Tank to Tank)		
Time	Position	Applicant's Actions or Behavior
	SRO	When plant stable (@ < 40 % power), conduct HPCS surveillance (RCIC Tank to RCIC Tank) IAW CPS ~~2801.00D002~~. Operators are standing by to support the surveillance. 9051.01, Step 83 Direct BOP to verify valve lineups and start HPCS pump. Direct BOP to verify proper HPCS startup.
	BOP	When directed: Verify valve lineups including: • HPCS MOV TEST PREP Switch to TEST. • HPCS test return line to RCIC tank full. (Cycle FW-10 & -11) Start HPCS pump. Verify minimum flow valve (FO-12) opens. • FO-12 auto opens when discharge pressure is > 145 # AND discharge flow is < 625 gpm. Simultaneously throttle open FO-10 & -11 until flow is 4900 gpm. Verify minimum flow valve (FO-12) closes. • FO-12 auto closes when pressure is < 145 # OR flow is > 625 gpm. Verify HPCS Pump Room Fans are operating. Action revised to be consistent w/ different surveillance procedure.
	RO	Monitor plant parameters as directed by SRO.
	CUE	After HPCS mini-flow valve is verified closed and HPCS is about 4900 gpm AND when directed by Chief examiner, enter EVENT 3 (FWLCS setpoint setdown logic failure).

Event No.: 3 (SRO-TS) HPCS Pump Breaker Failure when Pump is secured. ~~(RO - I) FWLCS Setpoint Setdown Logic Failure (causing it to actuate).~~ ~~(The setpoint initially increases to 40" to 10 sec. and then lowers to 18")~~ This is not a BOP/RO Component Failure.

Time	Position	Applicant's Actions or Behavior
	CUE	After HPCS mini-flow valve is verified closed and HPCS is about 4900 gpm AND when directed by Chief examiner, enter EVENT 3
	RO	Report RPV level transient. RPV High Level Alarm ~ 38.8" & Low Level Alarm ~ 30.8." When directed, take manual control of A-TDRFP and restore level to ~ 35." When directed, reset setpoint setdown signal. When directed, return RPV level control to automatic. Actions Revised
	SRO	Direct RO/BOP to determine cause of RPV level transient. Direct RO to take manual control of A-TDRFP and restore level to ~ 35." After SRO determines that the signal was invalid, direct RO to reset setpoint setdown signal. Direct RO to return RPV level control to automatic.
	BOP	Monitor plant parameters as directed by SRO.
	CUE	After RPV level is stable and in automatic AND when directed by the Chief examiner, enter Event 4 (HPCS pump discharge flow instrument for minimum flow valve (FO-12) fails low and FO-12 will auto open and will not remain closed.).

Event No.: 4 (RO - C) Rx Recirculation A-FCV Drifts Open		
Time	Position	Applicant's Actions or Behavior
	CUE	After SRO reports that plant is in TS 3.0.3 and has made decision to conduct a controlled shutdown AND when directed by the Chief examiner, enter Event 7.
	RO	Report increase in Rx power, recirculation flow, and generator load w/o operator action. When directed, lock up the A-FCV. Verify the plant is operating w/in the Stability Control & Power/Flow Map limits. Identify Recirc loop mismatch.
	SRO	Refer to CPS 4008.01, Abnormal Coolant Flow. Direct RO to lock up the A-FCV to stop FCV motion. Verify the plant is operating w/in the Stability Control & Power/Flow Map limits. Refer to TS 3.4.1 for recirculation loop flow mismatch (≤ 10% mismatch w/ power < 70% thermal).
	BOP	Monitor plant parameters as directed by SRO.
	CUE	When recirc FCV has been locked up AND when directed by the Chief examiner, insert Events 8 & 9 (Event 8 - MSIV rapid closure & subsequent Rx scram. Event 9 - Three SRVs open at scram and will not auto close, one will close manually).

Event No. ~~4~~ 5 - (BOP - I) ~~HPCS pump discharge flow instrument for minimum flow valve (FO-12) fails low and FO-12 will auto open and will not remain closed.~~ CRD Hydraulic Flow Controller Fails in Auto. (CRD FCV goes shut).		
Time	Position	Applicant's Actions or Behavior
	CUE	After RPV level is stable and in automatic AND when directed by the Chief examiner, enter Event 4.
	BOP	Report HPCS minimum flow control valve (FO-12) is open w/ HPCS pump operating. When directed, close FO-12. (The valve will re-open.) When directed, secure HPCS. Actions Revised to reflect new instrument failure.
	SRO	Determine that FO-12 will not remain closed due to HPCS pump discharge flow instrument for minimum flow valve failing low. Refer to TS 3.5.1.B and determine HPCS is inoperable (14 day LCO) Verify by administrative means that RCIC is operable w/in 1 hour. Direct BOP to secure HPCS. Contact Maintenance to initiate a work order and troubleshoot and/or repair.
	RO	Monitor plant parameters as directed by SRO.
	CUE	After SRO determines HPCS is inoperable and actions are being taken to secure HPCS AND when directed by the Chief examiner, enter Event 5 (LPCS/RHR-A water leg pump failure).

Event Nos.: ~~5~~ & 6 Event ~~5~~ 6: (SRO - TS) (LPCS/RHR-A Water Leg Pump Failure (Low discharge pressure due to leak). ~~Event 6: Reduce power due to TS required shutdown.~~

Time	Position	Applicant's Actions or Behavior
	CUE	After SRO determines HPCS is inoperable and actions are being taken to secure HPCS AND when directed by the Chief examiner, enter Event 5.
	BOP	Report Annunciator 5063-3G, LPCS PUMP DISCHARGE PRESS ABNORMAL. Low pressure alarm @ ~ 35 psig. Report LPCS/RHR-A water leg pump running. When directed, secure LPCS/RHR-A water leg pump.
	SRO CUE	Refer to ARP 5063-3G, LPCS PUMP DISCHARGE PRESS ABNORMAL. Direct RO/BOP to determine possible causes. Dispatch local area operator to investigate. LOCAL OPERATOR WILL REPORT WATER SPRAYING FROM PUMP CASING. Direct RO/BOP to secure LPCS/RHR-A water leg pump. Refer to TS 3.5.1.H (HPCS & LPCS inoperable which is TS 3.0.3) (Also recall that Div I DG is inoperable.) Make preparations for plant shutdown IAW CPS 3006.01, Unit Shutdown. (The first actions will be to verify rod pattern and then downshift pumps to slow.)
	RO	Monitor plant parameters as directed by SRO.
	CUE	After SRO reports that plant is in TS 3.0.3 and has made decision to conduct a controlled shutdown AND when directed by the Chief examiner, enter Event 7 (Rx Recirculation A-FCV Drifts Open)

Event 7 (BOP-C) Trip of "B" CCW Pump (Manually Start "A" CCW Pump)

~~Event Nos. 8 ,9, 10, &~~ 11. Event 8 (RO-I) FWLCS Master Controller Fails to 40"
Event 9 (Major) Earthquake w/ complications.
~~Event 8 - MSIV rapid closure & subsequent Rx scram.~~
~~Event 9 - (BOP-C & Major) Three SRVs open at scram and will not auto close, one will close manually. The remaining two are mechanically stuck open.~~
Event 10 - RCIC will trip on overspeed during auto (or manual start) & will not reset.
Event 11 - ADS Logic Failure (valves will open manually)

Time	Position	Applicant's Actions or Behavior (* Actions Modified to reflect revised Events)
	CUE	When recirc FCV has been locked up AND when directed by the Chief examiner, insert Events 8 & 9.
	SRO	Enter EOP-1 for Rx scram. Direct BOP to close open SRVs. Direct RO to continue w/ CPS 4100.01, Rx Scram. Direct BOP to reset RCIC and restart RCIC.
	BOP	Report 3 SRVs open (FO51 C, D, & F). When directed, close open SRVs. Report that only FO51D will closed. Report RCIC trip on startup (auto or manual). Report RCIC will not reset. Monitor plant parameters and operate equipment as directed by SRO.
	RO	Take Mode switch to Shutdown and verify shutdown criteria: All rods are in to at least 02; OR no more than one rod out past 02, with all other rods in at 00; OR a qualified Rx Eng has determined the Rx will remain shutdown under all conditions without boron. When directed, perform actions in CPS 4100.01, Rx Scram. Monitor plant parameters and operate equipment as directed by SRO.

Event Nos. 8 ,9, 10, & 11. **CONTINUED**

Time	Position	Applicant's Actions or Behavior
	SRO	Enter EOP - 6, Primary Containment Control when parameters exceed entry conditions. • DW/Containment Pressure > 1.68 psig • DW Temperature > 150 deg. F • Containment Temperature > 122 deg. F • Suppression Pool Level > 19 ft., 5 in. OR < 18 ft., 11 in. • Suppression Pool Temperature > 95 deg. F Direct RO/BOP to initiate/maximize Suppression pool cooling. Direct RO/BOP to initiate/maximize containment/drywell cooling
	RO BOP	When directed, initiate/maximize Suppression pool cooling. When directed, initiate/maximize containment/drywell cooling.

Event Nos. 8 ,9, 10, & 11. **CONTINUED**		
Time	Position	Applicant's Actions or Behavior
	SRO	Direct Emergency Depressurization (EOP-3) when level can not be held above TAF (-162") OR when Suppression Pool Temperature can not be held below Heat Capacity Limit. Direct RO/BOP to initiate ADS (it will not initiate). Direct RO/BOP to manually open SRVs to depressurize the RPV. Depressurize until < Shutdown Cooling Interlock pressure (104 psig) OR until RPV level > TAF.
	RO BOP	When directed, initiate ADS (it will not initiate). Report that ADS did not initiate. When directed, manually open SRVs to depressurize the RPV.
	CUE	End Scenario - RPV depressurized and level maintained above TAF, suppression pool cooling maximized, DW/Containment cooling maximized, AND when directed by the Chief Examiner.

Extra Comment Page (if needed)

Time	Position	Applicant's Actions or Behavior

Facility: __Clinton_____ Scenario No.: __2__ Op-Test No.: 2000301

Examiners: _____ Operators: _____

Objectives: Exercise EOP - 3, "Emergency Depressurization," due to loss of high pressure injection and high temperatures in suppression pool (two stuck open SRVs). Evaluate applicants while: 1) shifting recirc pumps to fast, 2) conducting HPCS surveillance, 3) responding to FWLCS setpoint setdown logic failure, 4) responding to HPCS pump discharge flow instrument for mini flow valve failure, 5) responding to LPCS/RHR-A water leg pump leak, 6) reducing power due TS shutdown, 7) responding to recirc FCV "A" drift open, 8) responding to MISV rapid closure & scram, 9) responding to three SRVs not auto close (two will not close), 10) responding to RCIC overspeed trip during auto (or manual) start (not reset), and 11) responding to ADS Logic Failure (valves will open manually).

Initial Conditions: ~35% power. Power was reduced to repair main condenser circulating water tube leakage. Div I DG OOS - maintenance is replacing a leaking relief valve on the air start system. It has been out of service for 1 day and is expected to be tested towards the end of this shift. The MDRFP is out of service - motor bearing replacement. Fuel shuffle in spent fuel pool.

Turnover: Unit is at ~ 35%. Continue pow... step 8.4.3, CPS 3004.01 completed ... surveillance (tank ... eillance. Engineerin... e and wants to re... ng relief valve on the ... ested near the enc... le in spent fuel po...

Clean copy of Scenario 2.

Approved prior to validation wk.

Event No.	Malf. No.		
1			
2			...02
3		I	...gic fails, causing it to actuate.
4		B	...ump discharge flow instrument for mini flow valve (FO12) fails low. Valve opens when pump is operating.
5		C SRO-TS	LPCS/RHR-A water leg pump failure (low discharge pressure due to leak).
6			Reducing power due to TS shutdown.
7		RO-C	Rx recirculation "A" flow control valve (FCV) drift open.
8		C	MSIV rapid closure - reactor scram.
9		BOP-C & M	Three SRVs not auto close. (Two will not close)
10		C	RCIC overspeed trip during auto (or manual) start (not reset).
11		C	ADS Logic Failure (valves will open manually)

* (N)ormal, (R)eactivity, (I)nstrument, (C)omponent, (M)ajor

Event No.: 1 (RO - Reactivity Change) Shift Recirculation Pumps to Fast Speed.		
Time	Position	Applicant's Actions or Behavior
	SRO	Conduct crew brief. The Reactivity Management brief was completed prior to the crew taking the shift. Transfer pumps to fast IAW CPS 3302.01, Reactor Recirculation, step 8.1.2. Verify Flow Control Line ≥ 60%. Direct local operators to bypass the FW Flow FCV cavitation / RR pump downshift interlock for each pump. Direct RO/BOP to Reset/Verify Reset FCV & pump interlocks. Direct FCV to be positioned at minimum position for pump being shifted to fast. Direct the other FCV be adjusted to maintain Rx power constant and Feedwater flow ≥ 3.13 mlbm/hr (~ 29.4 % RTP). Make notifications: RP of potential change in rad levels, Security the perimeter lighting may be effected, plant wide Gaitronics announcement. Direct RO to transfer pumps to fast speed (one at a time).
	RO	Verify Flow Control Line ≥ 60% using computer. Verify Annunciator 5003-4C/4J, RECIRC MTR A (B) AUTO TRIP OR XFER TO LS window has alarmed when interlock has been bypassed. When directed, Reset/Verify Reset RCV & pump interlocks. When directed, position the RCV at minimum for pump being shifted to fast. When directed, adjusted the other FCV to maintain Rx power constant and Feedwater flow ≥ 3.13 mlbm/hr (~ 29.4 % RTP). When directed, shift pumps to fast speed (one at a time).
	BOP	Monitor plant parameters as directed by SRO. When directed, adjusted the other FCV to maintain Rx power constant and Feedwater flow ≥ 3.13 mlbm/hr (~ 29.4 % RTP). When directed, monitor pump seal key parameters.

Event No: 1 (RO-Reactivity Change) Shift Recirculation Pumps to Fast Speed. **(CONTINUED)**		
Time	Position	Applicant's Actions or Behavior
	SRO	After pumps shifted to fast, direct STA to remove the substitute value from and restore points B33NA003 and/or 004, RR Pump A (B) Motor Power for the RR pump transfer to fast speed. Direct increase in power w/ FCV to between 35 & 39% to clear the cavitation interlocks. Direct RO/BOP to verify cavitation interlocks are cleared.
	RO	When directed, increase in power w/ FCV to between 35 & 39% to clear the cavitation interlocks. When directed, verify cavitation interlocks are cleared.
	BOP	Monitor plant parameters as directed by SRO.

Event No.: 2 - (Normal Evolution) HPCS Surveillance (Tank to Tank)		
Time	Position	Applicant's Actions or Behavior
	SRO	When plant stable (@ < 40 % power), conduct HPCS surveillance (RCIC Tank to RCIC Tank) IAW CPS 2801.00D002. Operators are standing by to support the surveillance. Direct BOP to verify valve lineups and start HPCS pump. Direct BOP to verify proper HPCS startup.
	BOP	When directed: Verify valve lineups including: • HPCS MOV TEST PREP Switch to TEST. • HPCS test return line to RCIC tank full. (Cycle FW-10 & -11) Start HPCS pump. Verify minimum flow valve (FO-12) opens. • FO-12 auto opens when discharge pressure is > 145 # AND discharge flow is < 625 gpm. Simultaneously throttle open FO-10 & -11 until flow is 4900 gpm. Verify minimum flow valve (FO-12) closes. • FO-12 auto closes when pressure is < 145 # OR flow is > 625 gpm. Verify HPCS Pump Room Fans are operating.
	RO	Monitor plant parameters as directed by SRO.
	CUE	After HPCS mini-flow valve is verified closed and HPCS is about 4900 gpm AND when directed by Chief examiner, enter EVENT 3 (FWLCS setpoint setdown logic failure).

Event No.: 3 (RO - I) FWLCS Setpoint Setdown Logic Failure (causing it to actuate). (The setpoint initially increases to 40" to 10 sec. and then lowers to 18")		
Time	Position	Applicant's Actions or Behavior
	CUE	After HPCS mini-flow valve is verified closed and HPCS is about 4900 gpm AND when directed by Chief examiner, enter EVENT 3
	RO	Report RPV level transient. RPV High Level Alarm ~ 38.8" & Low Level Alarm ~ 30.8." When directed, take manual control of A-TDRFP and restore level to ~ 35." When directed, reset setpoint setdown signal. When directed, return RPV level control to automatic.
	SRO	Direct RO/BOP to determine cause of RPV level transient. Direct RO to take manual control of A-TDRFP and restore level to ~ 35." After SRO determines that the signal was invalid, direct RO to reset setpoint setdown signal. Direct RO to return RPV level control to automatic.
	BOP	Monitor plant parameters as directed by SRO.
	CUE	After RPV level is stable and in automatic AND when directed by the Chief examiner, enter Event 4 (HPCS pump discharge flow instrument for minimum flow valve (FO-12) fails low and FO-12 will auto open and will not remain closed.).

Event No. 4 - (BOP - I) HPCS pump discharge flow instrument for minimum flow valve (FO-12) fails low and FO-12 will auto open and will not remain closed.		
Time	Position	Applicant's Actions or Behavior
	CUE	After RPV level is stable and in automatic AND when directed by the Chief examiner, enter Event 4.
	BOP	Report HPCS minimum flow control valve (FO-12) is open w/ HPCS pump operating. When directed, close FO-12. (The valve will re-open.) When directed, secure HPCS.
	SRO	Determine that FO-12 will not remain closed due to HPCS pump discharge flow instrument for minimum flow valve failing low. Refer to TS 3.5.1.B and determine HPCS is inoperable (14 day LCO) Verify by administrative means that RCIC is operable w/in 1 hour. Direct BOP to secure HPCS. Contact Maintenance to initiate a work order and troubleshoot and/or repair.
	RO	Monitor plant parameters as directed by SRO.
	CUE	After SRO determines HPCS is inoperable and actions are being taken to secure HPCS AND when directed by the Chief examiner, enter Event 5 (LPCS/RHR-A water leg pump failure).

Event Nos.: 5 & 6 Event 5: (SRO - TS) (LPCS/RHR-A Water Leg Pump Failure (Low discharge pressure due to leak). Event 6: Reduce power due to TS required shutdown.

Time	Position	Applicant's Actions or Behavior
	CUE	After SRO determines HPCS is inoperable and actions are being taken to secure HPCS AND when directed by the Chief examiner, enter Event 5.
	BOP	Report Annunciator 5063-3G, LPCS PUMP DISCHARGE PRESS ABNORMAL. Low pressure alarm @ ~ 35 psig. Report LPCS/RHR-A water leg pump running. When directed, secure LPCS/RHR-A water leg pump.
	SRO	Refer to ARP 5063-3G, LPCS PUMP DISCHARGE PRESS ABNORMAL. Direct RO/BOP to determine possible causes. Dispatch local area operator to investigate.
	CUE	LOCAL OPERATOR WILL REPORT WATER SPRAYING FROM PUMP CASING. Direct RO/BOP to secure LPCS/RHR-A water leg pump. Refer to TS 3.5.1.H (HPCS & LPCS inoperable which is TS 3.0.3) (Also recall that Div I DG is inoperable.) Make preparations for plant shutdown IAW CPS 3006.01, Unit Shutdown. (The first actions will be to verify rod pattern and then downshift pumps to slow.)
	RO	Monitor plant parameters as directed by SRO.
	CUE	After SRO reports that plant is in TS 3.0.3 and has made decision to conduct a controlled shutdown AND when directed by the Chief examiner, enter Event 7 (Rx Recirculation A-FCV Drifts Open)

Event No.: 7 (RO - C) Rx Recirculation A-FCV Drifts Open		
Time	Position	Applicant's Actions or Behavior
	CUE	After SRO reports that plant is in TS 3.0.3 and has made decision to conduct a controlled shutdown AND when directed by the Chief examiner, enter Event 7.
	RO	Report increase in Rx power, recirculation flow, and generator load w/o operator action. When directed, lock up the A-FCV. Verify the plant is operating w/in the Stability Control & Power/Flow Map limits. Identify Recirc loop mismatch.
	SRO	Refer to CPS 4008.01, Abnormal Coolant Flow. Direct RO to lock up the A-FCV to stop FCV motion. Verify the plant is operating w/in the Stability Control & Power/Flow Map limits. Refer to TS 3.4.1 for recirculation loop flow mismatch ($\leq$ 10% mismatch w/ power < 70% thermal).
	BOP	Monitor plant parameters as directed by SRO.
	CUE	When recirc FCV has been locked up AND when directed by the Chief examiner, insert Events 8 & 9 (Event 8 - MSIV rapid closure & subsequent Rx scram. Event 9 - Three SRVs open at scram and will not auto close, one will close manually).

Event Nos. 8 ,9, 10, & 11.
Event 8 - MSIV rapid closure & subsequent Rx scram.
Event 9 - (BOP-C & Major) Three SRVs open at scram and will not auto close, one will close manually. The remaining two are mechanically stuck open.
Event 10 - RCIC will trip on overspeed during auto (or manual start) & will not reset.
Event 11 - ADS Logic Failure (valves will open manually)

Time	Position	Applicant's Actions or Behavior
	CUE	When recirc FCV has been locked up AND when directed by the Chief examiner, insert Events 8 & 9.
	SRO	Enter EOP-1 for Rx scram. Direct BOP to close open SRVs. Direct RO to continue w/ CPS 4100.01, Rx Scram. Direct BOP to reset RCIC and restart RCIC.
	BOP	Report 3 SRVs open (FO51 C, D, & F). When directed, close open SRVs. Report that only FO51D will closed. Report RCIC trip on startup (auto or manual). Report RCIC will not reset. Monitor plant parameters and operate equipment as directed by SRO.
	RO	Take Mode switch to Shutdown and verify shutdown criteria: All rods are in to at least 02; OR no more than one rod out past 02, with all other rods in at 00; OR a qualified Rx Eng has determined the Rx will remain shutdown under all conditions without boron. When directed, perform actions in CPS 4100.01, Rx Scram. Monitor plant parameters and operate equipment as directed by SRO.

Event Nos. 8 ,9, 10, & 11. **CONTINUED**

Time	Position	Applicant's Actions or Behavior
	SRO	Enter EOP - 6, Primary Containment Control when parameters exceed entry conditions. • DW/Containment Pressure > 1.68 psig • DW Temperature > 150 deg. F • Containment Temperature > 122 deg. F • Suppression Pool Level > 19 ft., 5 in. OR < 18 ft., 11 in. • Suppression Pool Temperature > 95 deg. F Direct RO/BOP to initiate/maximize Suppression pool cooling. Direct RO/BOP to initiate/maximize containment/drywell cooling
	RO BOP	When directed, initiate/maximize Suppression pool cooling. When directed, initiate/maximize containment/drywell cooling.

Event Nos. 8 ,9, 10, & 11. **CONTINUED**		
Time	Position	Applicant's Actions or Behavior
	SRO	Direct Emergency Depressurization (EOP-3) when level can not be held above TAF (-162") OR when Suppression Pool Temperature can not be held below Heat Capacity Limit. Direct RO/BOP to initiate ADS (it will not initiate). Direct RO/BOP to manually open SRVs to depressurize the RPV. Depressurize until < Shutdown Cooling Interlock pressure (104 psig) OR until RPV level > TAF.
	RO BOP	When directed, initiate ADS (it will not initiate). Report that ADS did not initiate. When directed, manually open SRVs to depressurize the RPV.
	CUE	End Scenario - RPV depressurized and level maintained above TAF, suppression pool cooling maximized, DW/Containment cooling maximized, AND when directed by the Chief Examiner.

Extra Comment Page (if needed)

Time	Position	Applicant's Actions or Behavior

CPS Outline Submittal for Replacement Material

Contains the following:

ES-201-2	Examination Outline Quality Checklist
ES-301-1	Administrative Topics Outline (RO)
ES-301-1	Administrative Topics Outline (SRO)
ES-301-2	Control Room Systems and Facility Walk-Through Test Outline (RO)
ES-301-2	Control Room Systems and Facility Walk-Through Test Outline (SRO(U))

Facility: CLINTON POWER STATION Date of Examination: JUNE 12, 2000

Item	Task Description	Initials a	Initials b*	Initials c
1. WRITTEN	a. Verify that the outline(s) fit(s) the appropriate model per ES-401.		N/A	
	b. Assess whether the outline was systematically prepared and whether all knowledge and ability categories are appropriately sampled.			
	c. Assess whether the outline over-emphasizes any systems, evolutions, or generic topics.			
	d. Assess whether the repetition from previous examination outlines is excessive.			
2. SIM	a. Using Form ES-301-5, verify that the proposed scenario sets cover the required number of normal evolutions, instrument and component failures, and major transients.			
	b. Assess whether there are enough scenario sets (and spares) to test the projected number and mix of applicants in accordance with the expected crew composition and rotation schedule without compromising exam integrity; ensure each applicant can be tested using at least one new or significantly modified scenario, that no scenarios are duplicated from the applicants' audit test(s)*, and scenarios will not be repeated over successive days.			
	c. To the extent possible, assess whether the outline(s) conform(s) with the qualitative and quantitative criteria specified on Form ES-301-4 and described in Appendix D.			
3. W/T	a. Verify that: (1) the outline(s) contain(s) the required number of control room and in-plant tasks, (2) no more than 30% of the test material is repeated from the last NRC examination, (3)* no tasks are duplicated from the applicants' audit test(s), and (4) no more than 80% of any operating test is taken directly from the licensee's exam banks.	BM	BP	DM
	b. Verify that: (1) the tasks are distributed among the safety function groupings as specified in ES-301, (2) one task is conducted in a low-power or shutdown condition, (3) 40% of the tasks require the applicant to implement an alternate path procedure, (4) one in-plant task tests the applicant's response to an emergency or abnormal condition, and (5) the in-plant walk-through requires the applicant to enter the RCA.	BM	BP	DM
	c. Verify that the required administrative topics are covered, with emphasis on performance-based activities.	BM	BP	DM
	d. Determine if there are enough different outlines to test the projected number and mix of applicants and ensure that no items are duplicated on successive days.	BM	BP	DM
4. GENERAL	a. Assess whether plant-specific priorities (including PRA and IPE insights) are covered in the appropriate exam section.	BM	BP	DM
	b. Assess whether the 10 CFR 55.41/43 and 55.45 sampling is appropriate.	BM	BP	DM
	c. Ensure that K/A importance ratings (except for plant-specific priorities) are at least 2.5.	BM	BP	DM
	d. Check for duplication and overlap among exam sections.	BM	BP	DM
	e. Check the entire exam for balance of coverage.	BM	BP	DM
	f. Assess whether the exam fits the appropriate job level (RO or SRO).	BM	BP	DM

	Printed Name / Signature	Date
a. Author	P. Young	5/30/00
b. Facility Reviewer(*)	Robert L. Pace	5/30/00
c. Chief Examiner	Dell R. McNeil	05/31/00
d. NRC Supervisor	David E. Hills	5/31/00

(*) Not applicable for NRC-developed examinations.

Facility: Clinton Power Station
Date of Examination: June 12, 2000
Examination Level (circle one): (RO) / SRO
Operating Test Number: 2000301

Administrative Topic/Subject Description		Describe method of evaluation: 1. ONE Administrative JPM, OR 2. TWO Administrative Questions
A.1	Conduct of Operations: Plant Parameter Verification	JPM: Interpret Core Thermal Limits - Alternate Path, 1 parameter out of limits
	Conduct of Operations: Load Changes	JPM: Verify plant conditions met for reactor mode change - alternate path, conditions for mode change not met
A.2	Equipment Control: Tagout	JPM: Identify valves on P&ID to isolate RWCU pump "A" due to pump packing leak
A.3	Radiation Control: Calculating Personnel Exposure	JPM: Identify the dose rate the operator would receive hanging the tags on valves in the RWCU pump room
A.4	Emergency Plan: Emergency Communications	JPM: Make NARS Notifications - Alternate Path, Normal phone method does not work

Facility: Clinton Power Station
Date of Examination: June 12, 2000
Examination Level (circle one): RO / SRO
Operating Test Number: 2000301

Administrative Topic/Subject Description		Describe method of evaluation: 1. ONE Administrative JPM, OR 2. TWO Administrative Questions
A.1	Conduct of Operations: Plant Parameter Verification	JPM: Interpret Core Thermal Limits - Alternate Path, 1 Parameter Out of Limits
	Conduct of Operations: Fuel Handling	JPM: Determine if Fuel Loading Can Continue with a Source Range Instrument Out Of Service
A.2	Equipment Control: Tagouts	JPM: Verify the "A" RWCU Pump Isolation Boundary Tagout for Leaking Pump Packing is Adequate (at least one error in the tagout package)
A.3	Radiation Control: Enter a Locked High Rad Area	JPM: Identify the dose rate the operator would receive hanging the tags on valves in the RWCU pump room
A.4	Emergency Plan: Make PARS	JPM: Emergency Action Level Determination/Protective Action Levels Recommendation after Scenario #1

Facility: Clinton Power Station
Date of Examination: June 12, 2000
Exam Level (circle one): (RO) / SRO(I) / SRO(U)
Operating Test No.: 2000301

B.1 Control Room Systems

	System / JPM Title	Type Code*	Safety Function
a.	RPS/Reset a Reactor Scram	SMAL	7
b.	Roll the Main Turbine Generator to Rated Speed	SMAL	4
c.	Emergency Shutdown and Isolation of a Reactor Recirculation Pump from Fast Speed	SD	1
d.	Perform Emergency Containment Vent and Purge to Control Containment Hydrogen Level	SMAL	5
e.	Manually Perform a Group I Isolation	SMAL	3
f.	Inject to the RPV using SX through LPCI	SDL	2
g.	Defeat Fuel Building Ventilation Interlocks after High Radiation Isolation	CN	9

B.2 Facility Walk-Through

a.	Manually Valve-In ADS Backup Air Bottles	DRL	3
b.	Cross Connect DC Distribution Panels 1E & 1F	DR	6
c.	Transfer a CCW Temperature Regulating Valve from Auto to Manual Handwheel	NR	8

* Type Codes: (D)irect from bank, (M)odified from bank, (N)ew, (A)lternate path, (C)ontrol room, (S)imulator, (L)ow-Power, (R)CA

Facility: Clinton Power Station
Exam Level (circle one): RO / SRO(I) / SRO(U)

Date of Examination: June 12, 2000
Operating Test No.: 2000301

B.1 Control Room Systems

	System / JPM Title	Type Code*	Safety Function
a.	Reset a Reactor Scram	SMAL	7
b.	n/a		
c.	n/a		
d.	Perform Emergency Containment Vent and Purge to Control Containment Hydrogen Level	SMAL	5
e.	n/a		
f.	n/a		
g.	Defeat Fuel Building Ventilation Interlocks after High Radiation Isolation	CN	9

B.2 Facility Walk-Through

a.	Manually Valve-In ADS Backup Air Bottles	DRL	3
b.	n/a		
c.	Transfer a CCW Temperature Regulating Valve from Auto to Manual Handwheel	NR	8

* Type Codes: (D)irect from bank, (M)odified from bank, (N)ew, (A)lternate path, (C)ontrol room, (S)imulator, (L)ow-Power, (R)CA

CPS Submitted Replacement Operating Test

Contains the following:

ES-301-3	Operating Test Quality Checklist
ES-301-1	Administrative Topics Outline (RO) (Copy)
Admin JPMs	RO Admin JPMs (A.1.a, A.1.b, A.4) (Admin JPMs A.2 and A.3 were retained from the NRC Operating Test)
ES-301-1	Administrative Topics Outline (SRO) (Copy)
Admin JPMs	Admin JPMs (RO A.1.a) (SRO) (Admin JPMs A.1.b, A.2, A.3, and A.4 were retained from the NRC Operating Test)
ES-301-2	Control Room Systems and Facility Walk-Through Test Outline (RO)
ES-301-2	Control Room Systems and Facility Walk-Through Test Outline (SRO)

RO/SRO JPMs:

B.1.a
B.1.b
B.1.c
B.1.d
B.1.e
B.1.f
B.1.g - not attached, retained from NRC submitted examination
B.2.b
B.2.c

Submitted replacement operating test with NRC comments and NRC developed B.1.g.

#This QA checklist applies to the materials provided by Clinton Power Station personnel to replace materials that may have been video taped during validation. 1.a below is not initialed because of the replacement material.

Facility: Clinton Power Station Date of Examination: June 12, 2000 Operating Test Number: 2000301

	1. GENERAL CRITERIA	Initials a	Initials b	Initials c
a.	The operating test conforms with the previously approved outline; changes are consistent with sampling requirements (e.g., 10 CFR 55.45, operational importance, safety function distribution).	#	#	#
b.	There is no day-to-day repetition between this and other operating tests to be administered during this examination.	PM	BP	DM
c.	The operating test shall not duplicate items from the applicants' audit test(s)(see Section D.1.a).	PM	BP	DM
d.	Overlap with the written examination and between operating test categories is within acceptable limits.	PM	BP	DM
e.	It appears that the operating test will differentiate between competent and less-than-competent applicants at the designated license level.	PM	BP	DM
	2. WALK-THROUGH (CATEGORY A & B) CRITERIA	--	--	--
a.	Each JPM includes the following, as applicable: · initial conditions · initiating cues · references and tools, including associated procedures · validated time limits (average time allowed for completion) and specific designation if deemed to be time critical by the facility licensee · specific performance criteria that include: - detailed expected actions with exact criteria and nomenclature - system response and other examiner cues - statements describing important observations to be made by the applicant - criteria for successful completion of the task - identification of critical steps and their associated performance standards - restrictions on the sequence of steps, if applicable	PM	BP	DM
b.	The prescripted questions in Category A are predominantly open reference and meet the criteria in Attachment 1 of ES-301.	n/a	n/a	n/a
c.	Repetition from operating tests used during the previous licensing examination is within acceptable limits (30% for the walk-through) and do not compromise test integrity.	PM	BP	DM
d.	At least 20 percent of the JPMs on each test are new or significantly modified.	PM	BP	DM
	3. SIMULATOR (CATEGORY C) CRITERIA	--	--	--
a.	The associated simulator operating tests (scenario sets) have been reviewed in accordance with Form ES-301-4 and a copy is attached.	n/a	n/a	n/a

	Printed Name / Signature	Date
a. Author	P T Young / PT Young	5/31/00
b. Facility Reviewer(*)	R L Price / Robert A Miller / BP	5/31/00
c. NRC Chief Examiner (*)	R. McNeil / Alan R. McNeil	06/05/00
d. NRC Supervisor (*)	David E. Hills / David E Hills	6/9/00

(*) The facility signature is not applicable for NRC-developed tests; two independent NRC reviews are required.

Permission to Validate: Alan R. McNeil (Chief Examiner) 06/01/00 (Date) David E Hills (Branch Chief) 6/2/00 (Date)

Facility: Clinton Power Station
Date of Examination: June 12, 2000
Examination Level (circle one): (RO) / SRO
Operating Test Number: 2000301

Administrative Topic/Subject Description		Describe method of evaluation: 1. ONE Administrative JPM, OR 2. TWO Administrative Questions
A.1	Conduct of Operations: Plant Parameter Verification	JPM: Interpret Core Thermal Limits - Alternate Path, 1 parameter out of limits
	Conduct of Operations: Load Changes	JPM: Verify plant conditions met for reactor mode change - alternate path, conditions for mode change not met
A.2	Equipment Control: Tagout	JPM: Identify valves on P&ID to isolate RWCU pump "A" due to pump packing leak
A.3	Radiation Control: Calculating Personnel Exposure	JPM: Identify the dose rate the operator would receive hanging the tags on valves in the RWCU pump room
A.4	Emergency Plan: Emergency Communications	JPM: Make NARS Notifications - Alternate Path, Normal phone method does not work

Facility: Clinton Power Station
Date of Examination: June 12, 2000
Examination Level (circle one): RO / SRO
Operating Test Number: 2000301

Administrative Topic/Subject Description		Describe method of evaluation: 1. ONE Administrative JPM, OR 2. TWO Administrative Questions
A.1	Conduct of Operations: Plant Parameter Verification	JPM: Interpret Core Thermal Limits - Alternate Path, 1 Parameter Out of Limits
	Conduct of Operations: Fuel Handling	JPM: Determine if Fuel Loading Can Continue with a Source Range Instrument Out Of Service
A.2	Equipment Control: Tagouts	JPM: Verify the "A" RWCU Pump Isolation Boundary Tagout for Leaking Pump Packing is Adequate (at least one error in the tagout package)
A.3	Radiation Control: Enter a Locked High Rad Area	JPM: Identify the dose rate the operator would receive hanging the tags on valves in the RWCU pump room
A.4	Emergency Plan: Make PARS	JPM: Emergency Action Level Determination/Protective Action Levels Recommendation after Scenario #1

Admin JPM Worksheet RO A.1.a Core Thermal Limits

Facility: Clinton Task No: 011298C524

Task Title: Interpret Core Thermal Limits

Job Performance Measure No: NEW K/A Reference: 2.1.25

Examinee: _____ NRC Examiner: _____

Facility Evaluator: _____ Date: _____

Method of testing:

Simulated Performance _____ Actual Performance _____

Classroom X Simulator _____ Plant _____

READ TO THE EXAMINEE

I will explain the initial conditions, which steps to simulate or discuss, and provide initiating cues. When you complete the task successfully, the objective for this job performance measure will be satisfied.

Initial Conditions:

The plant is in a normal 100% power lineup

Task Standard:

All Core Thermal Limit violations have been identified.

Required Materials:

3D Monicore Periodic Log

General References:

CPS 9820.01 Power Distribution Limits, Step 8.0, Procedure

Initiating Cue:

The CRS has directed you to review a 3D Monicore Periodic Log.

Admin JPM Worksheet RO A.1.a Core Thermal Limits

Time Critical Task: NO

Validation Time: 15 minutes

Start Time: _____

PERFORMANCE INFORMATION

_____ Performance step:

Step 1: Determine the highest MFLCPR value.

Standard:

Applicant determines the highest MFLCPR value is ≤ 1.0.

Comment:

SAT_____ UNSAT_____

_____ Performance step:

Step 2: Determine the highest MFLPD value.

Standard:

Applicant determines the highest MFLPD value is ≤ 1.0.

Comment:

SAT_____ UNSAT_____

____*____ Performance step:

Step 3: Determine the highest MAPRAT value.

Standard:

Applicant determines the highest MAPRAT value is out of specification.
Indicated value is 1.001

Comment:

SAT_____ UNSAT_____

Terminating cue:

MAPRAT greater than 1.000 has been reported to the CRS.

Stop Time:_____

VERIFICATION OF COMPLETION

Job Performance Measure No. _____

Examinee's Name:

Examiner's Name:

Date performed:

Facility Evaluator:

Number of attempts:

Time to complete:

Question Documentation:

Question:_____

_____

_____

Response:_____

_____

_____

_____

Result: SAT or UNSAT

Examiner's signature and date: _____ _____

APPLICANTS COPY

Initial Conditions:

The plant is in a normal 100% power lineup

Initiating Cue:

The CRS has directed you to review a 3D Monicore Periodic Log.

Facility: Clinton Task No: 013299C003

Task Title: Verify Plant Parameters for Reactor Mode Change

Job Performance Measure No: NEW K/A Reference: 2.1.23

Examinee: _____ NRC Examiner: _____

Facility Evaluator: _____ Date: _____

Method of testing:

Simulated Performance X Actual Performance _____

Classroom _____ Simulator X Plant _____

READ TO THE EXAMINEE

I will explain the initial conditions, which steps to simulate or discuss, and provide initiating cues. When you complete the task successfully, the objective for this job performance measure will be satisfied.

Initial Conditions:

Reactor Pressure 936 psig., Reactor Power 8 - 10%.
CPS No. 3002.1 is done through step 8.6.4.c

Task Standard: Identify that plant conditions do not support changing to Mode 1

Required Materials: CPS No. 3002.01, Heatup and Pressurization

General References:

Simulator Setup Conditions:

1. Initialize simulator to IC that is ready for Mode 1
2. Insert malfunction LPRM_1439I_Action1 - A FLUXLEVEL @ 0.42

Initiating Cue:

The CRS has directed you to review plant conditions to ensure they support transferring the Reactor mode Switch to RUN and complete CPS 3002.01 steps 8.6.4 d) and e)

Time Critical Task: NO

Validation Time: 5 minutes

Start Time: _____

PERFORMANCE INFORMATION

_____ Performance step:

Step 1: Verifies Plant Parameters:
1) Reactor Power 8 - 10%.
2) Reactor Pressure 936 psig
3) Turbine Bypass Valves open

Standard:

Applicant determines plant parameters meet requirements
Power
Pressure
Bypass Valve

____*____ Performance step:

Step 2: Verifies proper IRM & APRM overlap by verifying all operable APRMs read between 5% and 12% with all operable IRMs on scale.

Standard:

Applicant determines that "B" APRM is reading 13%.

_____ Performance step:

Step 3: Verify/place all MOV TEST PREP switches in normal.

Standard:

Applicant verifies all MOV TEST PREP switches are in normal.

Terminating cue:

The "B" APRM reading 13% has been reported to the CRS, and the requirements to enter Mode 1 have not been met.

Stop Time:_____

VERIFICATION OF COMPLETION

Job Performance Measure No. _____

Examinee's Name:

Examiner's Name:

Date performed:

Facility Evaluator:

Number of attempts:

Time to complete:

Question Documentation:

Question:_____
_____
_____

Response:_____
_____
_____
_____

Result: SAT or UNSAT

Examiner's signature and date: _____ _____

APPLICANT'S COPY

Initiating Cue:

The CRS has directed you to review plant conditions to ensure they support transferring the Reactor mode Switch to RUN and complete CPS 3002.01 steps 8.6.4 d) and e).

Admin. JPM Worksheet RO A.4 Emergency Plan Notification

Facility: Clinton Task No: 045200C511

Task Title: Make Emergency Plan Notification to the Illinois Emergency Management Agency - Alternate path

Job Performance Measure No: New K/A Reference: G 2.4.43

Examinee: _____ NRC Examiner: _____

Facility Evaluator: _____ Date: _____

Method of testing:

Simulated Performance X Actual Performance _____

Classroom X Simulator _____ Plant X

READ TO THE EXAMINEE

I will explain the initial conditions, which steps to simulate or discuss, and provide initiating cues. When you complete the task successfully, the objective for this job performance measure will be satisfied.

Initial Conditions:

A condition exists where a Notification of Unusual Event has been declared.

Task Standard:

Applicant has simulated notifying the Illinois Emergency Management Agency by alternate communications, normal communications fails.

Required Materials: Completed NARS worksheet

General References:

EC-07 Emergency Plan Notification and attachments

Initiating Cue:

A condition exists where a Notification of Unusual Event is declared. The Nuclear Accident Reporting System Form is filled out and it is ready for being reported to offsite agencies. Make the report to Off-site agencies per EC-07.

Time Critical Task: **YES**

Validation Time: 15 minutes

Start Time: _____

PERFORMANCE INFORMATION

_____ Performance step: (Denote critical steps with an asterisk)

Step 1: Per 4.1.4, Prepare Attachment 1, NUCLEAR ACCIDENT REPORTING SYSTEM FORM (NARS form) (refer to Attachment 4 and Form 1).

Cue:

Provide completed Attachment 1, NARS form.

Standard:

NA activity is already completed

Comment:

SAT_____ UNSAT _____

_____ Performance step: (Denote critical steps with an asterisk)

Step 2: Notify the Illinois Emergency Management Agency (IEMA) and the Illinois Department of Nuclear Safety (IDNS) Dispatcher. Use the Green NARS phone and dial 98. If the initial emergency classification is a General Emergency, use dial code 36 and ensure the DeWitt County Sheriff's Dispatcher is also on the line.

Cue:

Just prior to the applicant picking up the GREEN NARS PHONE inform the Applicant there is no response from the green NARS phone from IEMA/IDNS

Standard:

Applicant recognizes the Green NARS phone is not responding

Comment:

SAT_____UNSAT_____

__*__ Performance step: (Denote critical steps with an asterisk)

Step 3: IF

the Nuclear Accident Reporting System phone is inoperative,

THEN

use one of the following commercial telephone numbers:

1-800-782-7860 or (IEMA)
1-217-782-7860

Standard: Within 15 minutes of declaring the NOUE, the applicant completes NARS notificaton

Applicant Locates phone and demonstrates how to connect to an outside line by dialing 9 (applicable to the onsite phone) then the commercial phone number. Dialing 9 doesn't apply when using a direct line.

Applicant simulates dialing one of the commercial telephone numbers.

Comment:

SAT_____ UNSAT_____

_____ Performance step: (Denote critical steps with an asterisk)

Step 4: NOTE
IEMA should pass on notifications to IDNS if the NARS phone has failed. However, this action should be verified with the IEMA dispatcher.

Standard: Applicant discusses with IEMA Dispatcher to contact IDNS

Cue: Evaluator answer as the IEMA Dispatcher and respond to discussion about notification of IDNS, during roll call.

Comment:

SAT_____ UNSAT _____

_____ Performance step: (Denote critical steps with an asterisk)

Step 5: NOTE

The MCR direct line phone number should be given to IEMA for callback verification if the call is initiated from the MCR.

Standard: Applicant provides IEMA Dispatcher the outside phone number on the NARS form. This will be provided on the report of the NARS form.

Comment:

SAT_____ UNSAT _____

___*___ Performance step: (Denote critical steps with an asterisk)

Step 6: Report NARS form data (refer to Attachment 4)

Standard: Applicant transmits data from the NARS form. Must report #2, #3.

Cue: Repeat back NARS form reports to applicant.

Comment: Use the copy of the NARS form to follow the report.

SAT_____UNSAT_____

Terminating cue:

Applicant has simulated contacting the IEMA Dispatcher and making the NARS form report.

Stop Time:_____

VERIFICATION OF COMPLETION

Job Performance Measure No. _____

Examinee's Name:

Examiner's Name:

Date performed:

Facility Evaluator:

Number of attempts:

Time to complete:

Question Documentation:

Question:_____

_____

_____

Response:_____

_____

_____

_____

Result: SAT or UNSAT

Examiner's signature and date: _____ _____

Admin. JPM Worksheet RO A.4

APPLICANTS COPY

Initial Conditions:

A condition exists where a Notification of Unusual Event has been declared.

Initiating Cue:

A condition exists where a Notification of Unusual Event is declared. The Nuclear Accident Reporting System Form is filled out and it is ready for being reported to offsite agencies. Make the report to Off-site agencies per EC-07.

CLINTON POWER STATION

JPM Worksheet - B.1.a, Reset a Reactor Scram per CPS No. 4100.01 - Alt Path

Facility: Clinton Power Station Task No: 015200C638

Task Title: Reset a Reactor Scram per CPS No. 4100.01 - Alternate Path

Job Performance Measure No: 015200J043 Modified

K/A Reference:

K/A SYSTEM NUMBER	K/A NUMBER	Importance Rating RO	Importance Rating SRO
212000 - Reactor Protection System	A 4.04	3.9	3.9
	A 4.14	3.8	3.8

Examinee: _____ NRC Examiner: _____

Facility Evaluator: _____ Date: _____

Method of testing:

Simulated Performance _____ Actual Performance ___X___

Classroom _____ Simulator _____X_____ Plant _____

READ TO THE EXAMINEE

I will explain the initial conditions, which steps to simulate or discuss, and provide initiating cues. When you complete the task successfully, the objective for this job performance measure will be satisfied.

Initial Conditions:

A Reactor Scram has occurred, plant conditions are stable and conditions are satisfied to reset the SCRAM.

Task Standard:

Reactor Scram is reset and then re-scrammed when subsequently two (2) rods drift out.

Required Materials: None

CLINTON POWER STATION

JPM Worksheet - B.1.a, Reset a Reactor Scram per CPS No. 4100.01 - Alt Path

General References:

CPS No. 4100.01, REACTOR SCRAM

Initiating Cue:

A Reactor Scram has occurred. Plant conditions are stable. No fuel failure is indicated. You are directed to reset the Reactor Scram per CPS 4100.01, Reactor Scram.

Time Critical Task: YES/**NO**

Validation Time: 10 minutes

Simulator Set-up Conditions:

Initialize to any suitable IC. Place the Reactor Mode Switch in "SHUTDOWN". Drive IN the SRMs and IRMs. Wait approximately 3 minutes for conditions to stabilize, silence, acknowledge, and reset the annunciators. (You may want to Snapshot to IC-40). Select and enter 2 Rods that will drift to full out upon scram reset. (Rods 12-41 & 36-33)

Start Time:_____

CLINTON POWER STATION

JPM Worksheet - B.1.a, Reset a Reactor Scram per CPS No. 4100.01 - Alt Path

PERFORMANCE INFORMATION

_*_ Performance step: (Denote critical steps with an asterisk)

4.8 b) Place all four BYP DISCH VOL HI LVL DIV 1(2,3&4) bypass switches to BYPASS.

Standard: Key-lock switches placed in BYPASS for all four BYP DISCH VOL HI LVL DIV 1(2,3&4) switches (critical).

Non-critical
Applicant silences and acknowledges each of the following P680 annunciators:
5004-1F - DIV 1 DIS VOL HI WTR TRIP BYP
5004-2F - DIV 4 DIS VOL HI WTR TRIP BYP
5005-1F - DIV 2 DIS VOL HI WTR TRIP BYP
5005-2F - DIV 3 DIS VOL HI WTR TRIP BYP

Comment:

SAT _____ UNSAT _____

_*_ Performance step: (Denote critical steps with an asterisk)

4.8.c) When SCRAM & ARI/RPT signals are clear, RESET Reactor Scram and ARI/RPT trips.

Standard: Applicant depresses all four SCRAM Reset Pushbuttons (critical)

Non-critical

Applicant verifies the following:
1. Blue lights above the Manual Scram pushbuttons are ON
2. ARI/RPT System 1 and 2 Initiated and Seal In Active lights are OFF

NOTE: At anytime following scram reset candidate may notice 2 rods drifting out of core however, it is not expected that the rods will be noticed until the ROD DRIFT Alarm is reset and then re-annunciates.

Comment:

SAT _____ UNSAT _____

CLINTON POWER STATION

JPM Worksheet - B.1.a, Reset a Reactor Scram per CPS No. 4100.01 - Alt Path

___ Performance step: (Denote critical steps with an asterisk)

4.8.d) Verify 1C11-F010/F011 & F180/F181, Scram Discharge Volume Vent and Drain Valves open.

Standard: Applicant verifies Red lights for 1C11-F010/F011 & F180/F181 are ON and GREEN lights extinguish.

NOTE: This step may not be performed if drifting rods are noticed

Comment:

SAT _____ UNSAT _____

___ Performance step: (Denote critical steps with an asterisk)

4.8.e) Re-verify all control rods are still fully inserted.

Standard: Applicant verifies control rod status on Full Core Display

NOTE: Applicant may switch between RAW Data and COOK Data to assist in determining rod position status. Rods are drifting out but may not be noticed until rod drift alarm re-annunciates (Rods 12-41, 36-33)

Comment:

SAT _____ UNSAT _____

___ Performance step: (Denote critical steps with an asterisk)

4.8.f) Clear the RESET DRIFT on the P680 System Mode panel.

Standard: Applicant depresses the RESET DRIFT Pushbutton on the P680 System Mode panel.
Applicant acknowledges and resets annunciator 5006-4G ROD DRIFT

Comment:

SAT _____ UNSAT _____

_*_ Performance step: (Denote critical steps with an asterisk)

Detects that multiple rods are withdrawing/drifting out of the core

Standard: Applicant recognizes multiple rod drifts (critical).

Non-critical
Acknowledges annunciator 5006-4G ROD DRIFT
Applicant verifies control rod status on Full Core Display

Comment:

SAT _____ UNSAT _____

CLINTON POWER STATION

JPM Worksheet - B.1.a, Reset a Reactor Scram per CPS No. 4100.01 - Alt Path

---

_*_ Performance step: (Denote critical steps with an asterisk)

Performs Immediate Operator Actions of CPS No. 4007.02 INADVERTENT ROD MOVEMENT

Attempts to stop rod movement
Recognizes that more than one (1) rod drift light is energized or continuous rod withdrawal can not be stopped
THEN Scrams the reactor. (INSERTS a Manual Reactor Scram)
Verifies shutdown criteria is met

Standard: Applicant INSERTS a Manual Reactor Scram and verifies all rods in.
Applicant may initiate ARI.

Comment:

SAT _____ UNSAT _____

Terminating cue: The reactor is re-scrammed and all rods are verified in.

SAT _____ UNSAT _____

CLINTON POWER STATION

JPM Worksheet - B.1.a, Reset a Reactor Scram per CPS No. 4100.01 - Alt Path

VERIFICATION OF COMPLETION

Job Performance Measure No. _____

Examinee's Name:

Examiner's Name:

Date performed:

Facility Evaluator:

Number of attempts:

Time to complete:

Question Documentation:

Question:_____
_____
_____

Response:_____
_____
_____
_____

Result: SAT or UNSAT

Examiner's signature and date: _____

CLINTON POWER STATION

JPM Worksheet

INITIATING CUE:

A Reactor Scram has occurred.
Plant conditions are stable.
No fuel failure is indicated.
You are directed to reset the Reactor Scram per CPS 4100.01, Reactor Scram.

Facility: Clinton Power Station
Date of Examination: June 12, 2000
Exam Level (circle one): RO / SRO(I) / SRO(U)
Operating Test No.: 2000301

B.1 Control Room Systems

	System / JPM Title	Type Code*	Safety Function
a.	RPS/Reset a Reactor Scram	SMAL	7
b.	Roll the Main Turbine Generator to Rated Speed	SMAL	4
c.	Emergency Shutdown and Isolation of a Reactor Recirculation Pump from Fast Speed	SD	1
d.	Perform Emergency Containment Vent and Purge to Control Containment Hydrogen Level	SMAL	5
e.	Manually Perform a Group I Isolation	SMAL	3
f.	Inject to the RPV using SX through LPCI	SDL	2
g.	Defeat Fuel Building Ventilation Interlocks after High Radiation Isolation	CN	9

B.2 Facility Walk-Through

a.	Manually Valve-In ADS Backup Air Bottles	DRL	3
b.	Cross Connect DC Distribution Panels 1E & 1F	DR	6
c.	Transfer a CCW Temperature Regulating Valve from Auto to Manual Handwheel	NR	8

* Type Codes: (D)irect from bank, (M)odified from bank, (N)ew, (A)lternate path, (C)ontrol room, (S)imulator, (L)ow-Power, (R)CA

Facility: Clinton Power Station
Exam Level (circle one): RO / SRO(I) / SRO(U)

Date of Examination: June 12, 2000
Operating Test No.: 2000301

B.1 Control Room Systems

	System / JPM Title	Type Code*	Safety Function
a.	Reset a Reactor Scram	SMAL	7
b.	n/a		
c.	n/a		
d.	Perform Emergency Containment Vent and Purge to Control Containment Hydrogen Level	SMAL	5
e.	n/a		
f.	n/a		
g.	Defeat Fuel Building Ventilation Interlocks after High Radiation Isolation	CN	9

B.2 Facility Walk-Through

a.	Manually Valve-In ADS Backup Air Bottles	DRL	3
b.	n/a		
c.	Transfer a CCW Temperature Regulating Valve from Auto to Manual Handwheel	NR	8

* Type Codes: (D)irect from bank, (M)odified from bank, (N)ew, (A)lternate path, (C)ontrol room, (S)imulator, (L)ow-Power, (R)CA

CLINTON POWER STATION

JPM Worksheet - B.1.b, Roll the Turbine Generator and Bring it to Rated Speed - Alt. Path

Facility: Clinton Power Station Task No:011203C005

Task Title: Roll the Turbine Generator and Bring it to Rated Speed per CPS No. 3105.01 - Alternate Path

Job Performance Measure No. 011203J002 Modified

K/A Reference:

K/A SYSTEM NUMBER	K/A NUMBER	Importance Rating RO	Importance Rating SRO
245000	A3.02	2.8	2.8
	A2.09	2.5	2.8

Examinee: _____ NRC Examiner: _____

Facility Evaluator: _____ Date: _____

Method of testing:

Simulated Performance _____ Actual Performance ____X____

Classroom _____ Simulator _____X_____ Plant _____

READ TO THE EXAMINEE

I will explain the initial conditions, which steps to simulate or discuss, and provide initiating cues. When you complete the task successfully, the objective for this job performance measure will be satisfied.

Initial Conditions:

A plant startup is in progress with the Turbine Generator ready to roll to rated speed.

Task Standard:

Main Turbine tripped based on high bearing vibrations > 8 mils with main Turbine speed $\leq$ 800 rpm.

Required Materials: None

CLINTON POWER STATION

JPM Worksheet - B.1.b, Roll the Turbine Generator and Bring it to Rated Speed - Alt. Path

General References:

CPS No. 3004.01, TURBINE STARTUP AND GENERATOR SYNCHRONIZATION
CPS No. 3105.01, TURBINE

Initiating Cue:

A plant startup is in progress. The CRS directs you to roll the turbine generator and bring it to rated speed per CPS No. 3105.01.

All prerequisites for Turbine Roll are complete including those required by CPS No. 3105.01 step 8.1.6.a. Additional information about the completed prerequisites:

- The main turbine has been on the Turning Gear Motor for a minimum of 4 hours.
- CV-4 testing has been accomplished.
- Hydraulic power unit for turbine control is in operation.

Currently at Step 8.2.6 in CPS No. 3004.01 and Step 8.1.6.f in CPS No. 3105.01.

You are to focus on those Main Control Room operator actions performed by the 'A' CRO.

Operators are available in the field at the Turbine Generator and on 781' Control Building.

If requested, provide applicant with a signed copy of CPS 3004.01.

Time Critical Task: **NO**

Validation Time: 20 minutes

Simulator Set-up Conditions:

Initialize to a suitable IC for Turbine Roll (#21).
Set Vibration on MT Bearing #4 to 75%.
Select OFF on chest/shell warming.
Obtain CPS No. 3004.01 and Initial section 5.0 and Section 8 up to the step to roll the Turbine Generator.

Start Time:_____

_____ Performance step: (Denote critical steps with an asterisk)

8.1.6.f) (MCR) Verify annunciators clear:

- TROUBLE TSI CAB (5007-4B)
- TROUBLE TSI CAB (5007-4C)

Standard: Applicant verifies annunciators clear on MCR panel P680

- TROUBLE TSI CAB (5007-4B)
- TROUBLE TSI CAB (5007-4C)

Comment:

SAT _____ UNSAT _____

__*__ Performance step: (Denote critical steps with an asterisk)

8.1.6.g) Select the "MEDIUM" STARTING RATE:

Cue:

Standard: Applicant depresses "Medium" pushbutton on MCR panel P680 Turbine controls and verifies pushbutton light ON.

Comment:

SAT _____ UNSAT _____

_____ Performance step: (Denote critical steps with an asterisk)

8.1.7.a) IF the automatic feature fails, THEN Use 1ES-EHS, Exh Hood Spray Init Vlv to maintain exhaust hood temperature between 140 - 200 F.

Standard: Auto feature is working

NOTE: Exhaust hood temperatures should not require use of 1ES-EHS.

Comment:

SAT _____ UNSAT _____

_____ Performance step: (Denote critical steps with an asterisk)

8.1.7.b) IF: During the speed increase, a turbine condition is detected which is serious enough to require a speed reduction, THEN: The speed reduction should be done by pushing CLOSE VALVES or tripping the turbine.

Standard: If turbine condition is serious enough candidate uses pushing CLOSE VALVES <u>or</u> trips turbine.

Comment:

SAT _____ UNSAT _____

_____ Performance step: (Denote critical steps with an asterisk)

8.1.7.c) Check the following items as turbine speed increases:

Vibration (Refer to Step 8.3.7)
No detectable rubs
Exhaust hood temperature
Bearing oil flows and temperatures
P870 turbine recorders 1UR-TS001/2

Standard:

Applicant monitors the following items from MCR as turbine speed increases:

Vibration (Refer to step 8.3.7)
Exhaust hood temperature
P870 turbine recorders 1UR-TS001/2

Applicant request information on the following from the field either from NLO or Group Leader:

No detectable rubs
Bearing oil flows and temperatures

NOTE: P870 turbine recorders 1UR-TS001/2 would normally be monitored by the 'B' CRO. The 'A' CRO does have indications of these parameters on DCS screen displays.

Cue: When asked, inform applicant there are no detectable rubs and bearing oil flows and temperatures are normal.

SAT _____ UNSAT _____

__*__ Performance step: (Denote critical steps with an asterisk)

8.1.7.d) Select SPEED SET RPM at 100 and observes

Main Stop Valves (MSVs) open.
Intercept Valves (IVs) open slowly.
No. 1 and 2 Control Valves (CVs) begin to open.
Main Turbine rolls off the turning gear
SPEED INCREASING light comes "ON".

Standard: Applicant depresses the "100" SPEED SET RPM and verifies pushbutton light is ON. (critical)

Non-critical
Applicant observes the following:

Main Stop Valves (MSVs) open - observes DCS display indication (Red Indication)
Intercept Valves (IVs) open slowly - observes DCS display indication (Red Indication)

Cue: If asked, tell applicant that IVs indicate open.

NOTE: Simulator IV position indications are incorrect - they don't open until turbine is rolled and is > 1200 rpm, this has been documented on Simulator Problem Report.

- No. 1 and 2 Control Valves (CVs) begin to open - observes DCS display indication.
- Main Turbine rolls off the turning gear - observes DCS display indication (B-CRO, window 5017, 7C)
- SPEED INCREASING light comes "ON" - observes panel display indication.
- Annunciators Div 1 or 4 (window 5004, 1D), and Div 2 or 3 (window 5005, 1D); TSV CV TRIP clear.

Comment:

SAT _____ UNSAT _____

_____ Performance step: (Denote critical steps with an asterisk)

8.1.7.e) After the turbine rolls off the turning gear, Place the Turning Gear Motor, 1TG03K control switch in AUTO/AFTER STOP to enable the auto start feature.

Standard: Applicant verifies Turning Gear disengages as seen on DCS or disengaged green light ON indicated on MCR panel P870.

NOTE: Placing the Turning Gear Motor, 1TG03K control switch in AUTO/AFTER STOP would normally be done by the 'B' CRO.

Cue: Inform applicant that the B-CRO performed this action.

Comment:

SAT _____ UNSAT _____

__*__ Performance step: (Denote critical steps with an asterisk)

8.1.7.f) WHEN THE "AT SET SPEED" LIGHT comes "ON", select SPEED SET RPM at 800 and observe the SPEED INCREASING light comes "ON".

Standard:

When "AT SET SPEED" light comes ON Applicant depresses "800" SPEED SET RPM Pushbutton and verifies pushbutton light ON. (Verifying light ON is not critical)

Comment:

SAT _____ UNSAT _____

_____ Performance step: (Denote critical steps with an asterisk)

8.1.7.g) (Local operator action, C area operator) When turbine speed is greater than 100 rpm, Reset the auxiliary speed signal lights on the system monitor panel by depressing both ELECTRICAL MALFUNCTION RESET push-buttons simultaneously on the System Monitoring panel

Standard: Direct C Area Operator on Control Building 781' to reset the auxiliary speed signal lights on the system monitor panel by depressing both ELECTRICAL MALFUNCTION RESET push-buttons simultaneously on the System Monitoring panel.

Cue: Panel not available in the simulator, if asked tell applicant that the action is completed.

Note to examiner: The Electrical Malfunction System Fault light remains illuminated when the local operator depresses the Electrical Malfunction Reset Pushbutton.

SAT _____ UNSAT _____

_____ Performance step: (Denote critical steps with an asterisk)

High Vibration Turbine Shaft (Pre Trip) occurs at some point during the roll up to prior to 800 rpm. References CPS 5007.04 window 4-D.

Standard: Applicant reports main turbine vibrations trending up, Applicant refers to CPS No. 3105.01, Turbine High Vibration levels section 8.3.7. If annunciator 5007-4D is received, applicant refers to CPS No. 5007.04 for window 4-D.

NOTE: Auto trip occurs at 10 mils (3.3 second time delay). Vibrations should not exceed 9 mils based on setup conditions.

Comment:

SAT _____ UNSAT _____

__*__ Performance step: (Denote critical steps with an asterisk)

CPS 3105.01 ABNORMAL PERFORMANCE, section 8.3.7, "Turbine High Vibration levels". Trip the turbine if vibrations are ≥ 8 Mils.

Standard: Applicant simultaneously depresses both Turbine Trip Pushbuttons (critical) when vibrations ≥ 8 Mils. Applicant may trip turbine prior to 8 Mils. Verifies the main turbine is tripped.

Identifies:

- all turbine valves closed on DCS display (green light)
- turbine speed is lowering.
- trip valve indicating lights are backlit green and "tripped" is illuminated

Comment:

SAT _____ UNSAT _____

Terminating cue:

The Turbine Generator is tripped.

SAT _____ UNSAT _____

CLINTON POWER STATION

JPM Worksheet - B.1.b, Roll the Turbine Generator and Bring it to Rated Speed - Alt. Path

VERIFICATION OF COMPLETION

Job Performance Measure No. _____

Examinee's Name:

Examiner's Name:

Date performed:

Facility Evaluator:

Number of attempts:

Time to complete:

Question Documentation:

Question:_____
_____
_____
_____

Response:_____
_____
_____
_____
_____

Result: SAT or UNSAT

Examiner's signature and date: _____ _____

CLINTON POWER STATION

JPM Worksheet - B.1.b

INITIATING CUE:

A plant startup is in progress.

You are directed by the CRS to roll the turbine generator and bring it to rated speed per CPS No. 3105.01.

All prerequisites for Turbine Roll are complete including those required by CPS No. 3105.01 step 8.1.6.e. Additional information about the completed prerequisites:

- The main turbine has been on the Turning Gear Motor for a minimum of 4 hours.
- CV-4 testing has been accomplished.
- Hydraulic power unit for turbine control is in operation.

Currently at Step 8.2.6 in CPS No. 3004.01 and Step 8.1.6.f in CPS No. 3105.01.

You are to focus on those Main Control Room operator actions performed by the 'A' CRO.

Operators are available in the field at the Turbine Generator and on 781' Control Building.

CLINTON POWER STATION
JPM Worksheet - B.1.c,
Emergency Shutdown and Isolation of One Reactor Recirculation
Loop from Fast Speed per CPS No. 3302.01

Facility: Clinton Power Station Task No:014202J001

Task Title: Emergency Shutdown And Isolation of One Reactor Recirculation Loop From Fast Speed per CPS No. 3302.01

Job Performance Measure No:014202J001

K/A Reference:

202001	A4.01	3.7	3.7
	A4.02	3.5	3.5
	A4.05	3.3	3.3

Examinee: _____ NRC Examiner: _____

Facility Evaluator: _____ Date: _____

Method of testing:

Simulated Performance _____ Actual Performance ____X___

Classroom _____ Simulator _____X_____ Plant _____

READ TO THE EXAMINEE

I will explain the initial conditions, which steps to simulate or discuss, and provide initiating cues. When you complete the task successfully, the objective for this job performance measure will be satisfied.

Initial Conditions:

The plant is operating at 100 % power step, 71 on the 104% rod line.

Task Standard:

Reactor Recirculation Pump B shutdown and the "B" Loop of RR System isolated

CLINTON POWER STATION
JPM Worksheet - B.1.c,
Emergency Shutdown and Isolation of One Reactor Recirculation
Loop from Fast Speed per CPS No. 3302.01

Required Materials: None

General References:

CPS No. 3302.01, REACTOR RECIRCULATION

Initiating Cue:

The plant is operating at 100 % power step, 71 on the 104% rod line. The Reactor Recirc. Pump "B" outer seal has failed and the inner seal is degrading. You are to perform an Emergency Shutdown and isolation of the "B" Reactor Recirculation Loop. Stop prior to isolating CRD seal injection flow.

Time Critical Task: YES/**NO**

Validation Time: 15 minutes

Simulator Set-up Conditions:

1. Initialize to any suitable IC (IC-1 is recommended) with RR Pumps in fast speed and rod line such that trip does not cause entry into restricted zone.
2. Load Remote LC103 to shut 1C11-F026B using a remote or manual trigger.
3. Insert RR06C, RR Pump "B" Seal B1 Failure, 100%.
4. Insert RR06D, RR Pump "B" Seal B2 Failure, 100% with 5 minute ramp, then take the simulator out of FREEZE.
5. Start one mixing compressor and maintain DW pressure between 0.3 and 1.0 psig.
6. Freeze the simulator when Drywell pressure is approximately 0.6 psig.

Start Time_____

CLINTON POWER STATION
JPM Worksheet - B.1.c,
Emergency Shutdown and Isolation of One Reactor Recirculation
Loop from Fast Speed per CPS No. 3302.01

PERFORMANCE INFORMATION

_____ Performance step: (Denote critical steps with an asterisk)

8.2.3 RR Loop - Emergency Shutdown / RR Pump Trip

CAUTION
Core flow near the RESTRICTED ZONE increases the potential for thermal hydraulic instabilities. If instability is observed or the restricted zone is entered, an immediate SCRAM is required. Do not operate with partial FW heating (4005.01) when only one RR pump is operating (Rapid Plant Shutdown required). Single Loop Operating limits are controlled per the appropriate 300x.01 integrated operating procedure.

___*___ Performance step: (Denote critical steps with an asterisk)

8.2.3.1 Trip RR Pump A(B), ensuring pump amps and speed show a complete pump trip from fast speed by opening Bkr 3A(3B), 4A(4B) or 5A(5B).

Standard: The operator depresses the pushbuttons for the 3B, 4B, or 5B breaker to the open position. Breaker indication is green for motor breaker used. Pump amps on CRT and speed indication on P678 are zero.

NOTE: Operator may lower reactor water level prior to tripping the pump.

Comment:

SAT_____UNSAT_____

___*___ Performance step: (Denote critical steps with an asterisk)

8.2.3.2 Shut 1B33-F067A(B), Discharge Vlv.

Standard: The close pushbutton for 1B33-F067B is depressed, and when the valve is shut, observes its red light is "OUT" and the green light is "ON" (indicates shut).

Note: It will take two minutes to fully close this valve.
Annunciator "RECIRC MTR B LS AUTO XFER CKT NA" will alarm when 1B33-F067B closes.

Comment:

SAT_____UNSAT_____

_____ Performance step: (Denote critical steps with an asterisk)

8.2.3.3 Enter CPS No. 4008.01, ABNORMAL REACTOR COOLANT FLOW.

Standard: Verifies Immediate Operator Actions. Informs CRS that plant is in the 'EXIT' region of the P/F Map.

Comment:

SAT_____UNSAT_____

___*___Performance step: (Denote critical steps with an asterisk)

8.2.4 Idle RR Loop - Isolating

CAUTION: With the RR pump shutdown and injection flow stopped, seal cavity will reach 185°F in ~ 30 to 60 minutes. Seal damage may occur at > 250°F and the time necessary to reach 250°F will be dependent upon the seal leakage rate and initial cavity temperature.

Securing CRD injection to a RR pump which has been secured and isolated due to a seal leak will cause an increase in DW airborne activity as the loop depressurizes to atmosphere through the seal.

8.2.4.1 Shut 1G33-F100(F106), Recirc Loop A(B) Suct. [RT valves]

Standard: The operator depresses the CLOSE pushbutton for 1G33-F106, the valve indicates shut, green light "ON", red light "OFF".

Comment:

SAT_____UNSAT_____

_____ Performance step: (Denote critical steps with an asterisk)

8.2.4.2 Shut 1B33-F067A(B), Discharge Vlv.

Standard: Previously Shut.

Comment:

SAT_____UNSAT_____

___*___Performance step: (Denote critical steps with an asterisk)

8.2.4.3 Shut 1B33-F075A(B), Pmp A(B) Seal Stag Shutoff Vlv.

Standard: The operator takes the 1B33-F075B switch to the CLOSE position.

Comment:

SAT_____UNSAT_____

___*___Performance step: (Denote critical steps with an asterisk)

8.2.4.4 IF Loop suction isolation is required to prevent further system degradation or system challenges
THEN Shut 1B33-F023A(B), Pmp Suction Vlv.

Standard: The operator depresses the CLOSE pushbutton for 1B33-F023B, and the valve indicates shut, green light "ON", and red light "OFF".

NOTE:
1. Per the initiating cue on seal status.
2. It will take two minutes to fully close this valve.
3. The annunciator "RECIRC MTR B LS AUTO XFER CKT NA" will alarm when 1B33-F023B closes.

Comment:

SAT_____UNSAT_____

_____ Performance step: (Denote critical steps with an asterisk)

8.2.4.5 Notify Chemistry that the RR loop will be isolated. Coordinate with Chemistry to establish normal water chemistry limits for power operation before fully isolating the loop due to possible high conductivity intrusion (i.e., isolating the idle loop prior to power accession).

Standard: The operator reminds the CRS to contact Chemistry concerning chemistry limits

NOTE: As the CRS, acknowledge the reminder.

Comment:

SAT_____UNSAT_____

_____ Performance step: (Denote critical steps with an asterisk)

8.2.4.6 <u>When</u> Idle RR loop has cooled down to < 250°F,

<u>or</u>

In the event the RR seals are failed, idle RR loop has depressurized to ~ Drywell pressure.

<u>Then</u> If RR Aux Seal Inj Pump is not running, then shut 1C11-F026A(B), CRD Supp Isol To RR Pump a(B).

Standard: Allows loop depressurization via blown recirc. pump seals.

Cue: Time has been compressed and that the loop has been depressurized to approximately drywell pressure.

Comment:

SAT_____UNSAT_____

Terminating cue:

This is all the further we need to go in this procedure. (Examiner terminates JPM.)

VERIFICATION OF COMPLETION

CLINTON POWER STATION
JPM Worksheet - B.1.c,
Emergency Shutdown and Isolation of One Reactor Recirculation
Loop from Fast Speed per CPS No. 3302.01

Job Performance Measure No. _____

Examinee's Name:

Examiner's Name:

Date performed:

Facility Evaluator:

Number of attempts:

Time to complete:

Question Documentation:

Question:_____
_____
_____

Response:_____
_____
_____
_____

Result: SAT or UNSAT

Examiner's signature and date: _____ _____

INITIATING CUE

The plant was operating at 100 % power step, 71 on the 104% rod line. The Reactor Recirc. Pump "B" outer seal has failed and the inner seal is failing. The CRS has directed you to perform an Emergency Shutdown and isolation of the "B" Reactor Recirculation Loop.

CLINTON POWER STATION

JPM Worksheet B.1.d, Perform Emergency Containment Vent and Purge to Control Containment Hydrogen Levels per CPS No. 4411.06 - Alt Path

Facility: Clinton Power Station Task No:015200C627

Task Title: Perform Emergency Containment Vent and Purge to Control Containment Hydrogen Levels per CPS No. 4411.06

Job Performance Measure No:015200J040

K/A Reference:

K/A SYSTEM NUMBER	K/A NUMBER	IMPORTANCE RATING ROSRO
223001	A 2.04	3.7/3.8
	A 2.06	4.1*/4.1*

Examinee: _____ NRC Examiner: _____

Facility Evaluator: _____ Date:_____

Method of testing:

Simulated Performance _____ Actual Performance ____x____

Classroom _____ Simulator _____x_____ Plant _____

READ TO THE EXAMINEE

I will explain the initial conditions, which steps to simulate or discuss, and provide initiating cues. When you complete the task successfully, the objective for this job performance measure will be satisfied.

Initial Conditions: Primary containment hydrogen concentration is 1%.

CLINTON POWER STATION

JPM Worksheet B.1.d, Perform Emergency Containment
Vent and Purge to Control Containment Hydrogen Levels
per CPS No. 4411.06 - Alt Path

Task Standard: Containment Hydrogen Purge is initiated in accordance with CPS No. 4411.06, EMERGENCY CONTAINMENT VENTING, PURGING, AND VACUUM RELIEF. Completion of the task requires use of a Standby Gas Treatment Train other than the one initially prescribed.

Required Materials: None

General References:

CPS No. 4411.06, EMERGENCY CONTAINMENT VENTING, PURGING, AND VACUUM RELIEF

Initiating Cue: You are directed to vent and purge the Primary Containment using CPS No. 4411.06, EMERGENCY CONTAINMENT VENTING, PURGING, AND VACUUM RELIEF, Section 2.8, Containment Hydrogen Purge. No other sections of CPS No. 4411.06 have been performed.

Use VG Train 'A'

Time Critical Task: YES/**NO**

Validation Time: 15 Minutes

CLINTON POWER STATION

JPM Worksheet B.1.d, Perform Emergency Containment
Vent and Purge to Control Containment Hydrogen Levels
per CPS No. 4411.06 - Alt Path

Simulator Set-up Conditions:

1. Instructor Override Switch for damper 1VG01YA to NORMAL
2. Initialize to IC-21
3. Start both Igniters
4. Start both Hydrogen Mixing Compressors.
5. Verify that Containment pressure is less than 2.6 psig.
6. Remove tags from valves 1VR002A, 1VR002B, 1VQ006A, and 1VQ006B.

START TIME:_____

CLINTON POWER STATION

JPM Worksheet B.1.d, Perform Emergency Containment
Vent and Purge to Control Containment Hydrogen Levels
per CPS No. 4411.06 - Alt Path

PERFORMANCE INFORMATION

_____ Performance step: (Denote critical steps with an asterisk)

2.8.1 Verify CNMT pressure < 2.6 psid by HI CNMT PRESS white indicating light (above 1VG01YA/B switch) being OFF.

Standard: HI CNMT PRESS white light OFF

NOTES:

1. Examinee should also verify that Containment and Drywell temperatures are less than 212°F per the CAUTION at beginning of section.
2. Hydrogen concentration is 1% as stated in Initiating Cue.

Comment:

SAT_____UNSAT_____

__*__ Performance step: (Denote critical steps with an asterick)

2.8.3 Place control switches for both 1VG02YA & B, SGTS Trn A(B) Fuel Bldg Isol Dmprs to the CLOSE position.

Standard: Key lock switches placed/verified in CLOSE position and Green Lights ON.

NOTE: 1VG02YA(B) will indicate shut with control switch in AUTO, switch must be taken to CLOSE to satisfy conditions for the Flowpath.
Annunciators NOT AVAILABLE VG SYS Div 1 and 2 activate

Comment:

SAT_____UNSAT_____

_____ Performance step: (Denote critical steps with an asterisk)

2.8.4 Verify following dampers shut:

a) 1VG02YA & B, SGTS Trn A(B) Fuel Bldg Isol Dmprs.
b) 1VG04YA & B, SGTS Trn A(B) Pmp Rms Suct Dmprs.
c) 1VG05YA & B, SGTS Trn A(B) Fuel Bldg Suct Dmprs.
d) 1VG06YA & B, SGTS Trn A(B) ECCS Rms Suct Dmprs.

Standard: Green lights ON for 1VG02YA & B, 1VG04YA & B, 1VG05YA & B, and 1VG06YA & B.

Comment:

SAT_____UNSAT_____

___*___ Performance step: (Denote critical steps with an asterisk)

2.8.5 Open both 1VQ006A and B, CNMT Bldg Exh Outbd (Inbd) Isol Byp Vlvs.

Standard: Keylock switches placed in op[en and Red lights ON for 1VQ006A and 1VQ006B

Comment:

SAT_____UNSAT_____

__*____ Performance step: (Denote critical steps with an asterick)

2.8.6 Start SGTS Trn A Exh Fan, 0VG02CA.

Standard: OVG02CA will not have a flowpath until the next step is performed.

NOTE: Eventually get Annunciator Low Flow Alarm "SGTS A."

Comment:

SAT_____UNSAT_____

___*___ Performance step: (Denote critical steps with an asterick)

2.8.7 Place 1VG01YA, SGTS Trn A DW Prg Isol Dmpr control switch PURGE.

Standard: Keylock switch to Purge, GREEN light stays ON for 1VG01YA
Recognizes Isolation damper did not open
Reports to CRS that 'A' train SGTS cannot be used.

NOTE: CRS directs RO to use SGTS 'B" Train

Comment:

SAT_____UNSAT_____

_____ Performance step: (Denote critical steps with an asterick)

Closes 1VG01YA and STOPS SGTS 'A' fan

Standard: Closes 1VG01YA and STOPS SGTS 'A' fan

NOTE: Proceeds to Start SGTS 'B'

Comment:

SAT_____UNSAT_____

___*___ Performance step: (Denote critical steps with an asterisk)

2.8.6 Start SGTS Trn B Exh Fan, 0VG02CB.

Standard: OVG02CB will not have a flowpath until the next step is performed.

Comment: Eventually get Annunciator Low Flow Alarm "SGTS B."

Comment:

SAT_____UNSAT_____

___*___ Performance step: (Denote critical steps with an asterick)

2.8.7 Place 1VG01YB, SGTS Trn B DW Prg Isol Dmpr control switch to PURGE.

Standard: Keylock switch to PURGE, Red light ON for 1VG01YB

Comment:

SAT_____UNSAT_____

_____ Performance step: (Denote critical steps with an asterick)

2.8.8 Start both hydrogen mixing units per CPS No. 3316.01, CONTAINMENT COMBUSTIBLE GAS CONTROL (HG).

Standard: Verifies that both mixers are operating.

Comment:

SAT_____UNSAT_____

___*___ Performance step: (Denote critical steps with an asterisk)

2.8.9 **WHEN** CNMT pressure is ~ 0 psig,

THEN Open both 1VR002A and B, CNMT Bldg Sply Outbd Inbd) Isol Byp Vlvs.

Standard: Checks on Cnmt Pressure
Keylock switch to open, Red lights ON for 1VR002A and 1VR002B

NOTE: If containment pressure is > 0 psig then inform the applicant that pressure is approximately 0 psig.

Comment:

SAT_____UNSAT_____

Terminating cue: Containment Hydrogen Purge has been initiated with SGTS train 'B'.

CLINTON POWER STATION

JPM Worksheet B.1.d, Perform Emergency Containment
Vent and Purge to Control Containment Hydrogen Levels
per CPS No. 4411.06 - Alt Path

VERIFICATION OF COMPLETION

Job Performance Measure No. _____

Examinee's Name:

Examiner's Name:

Date performed:

Facility Evaluator:

Number of attempts:

Time to complete:

Question Documentation:

Question:_____
_____
_____

Response:_____
_____
_____
_____

Result: SAT or UNSAT

Examiner's signature and date: _____ _____

CLINTON POWER STATION

JPM Worksheet B.1.d

INITIATING CUE:

An emergency condition exists. Primary Containment hydrogen concentration is 1%. You are directed to vent and purge the Primary Containment using CPS No. 4411.06, EMERGENCY CONTAINMENT VENTING, PURGING, AND VACUUM RELIEF, Section 2.8, Containment Hydrogen Purge. No other sections of CPS No. 4411.06 have been performed.

Use VG Train 'A'

CLINTON POWER STATION

JPM Worksheet - B.1.e, Manually Perform a Group 1 Isolation - Alt Path

Facility: Clinton Power Station Task No:014200C679

Task Title: Manually Perform a Group 1 Isolation per CPS No. 4001.02 - Alt. Path

Job Performance Measure No:014200J008 Modified

K/A Reference:

K/A SYSTEM NUMBER	K/A NUMBER	Importance Rating RO	SRO
223002	A 4.02	3.9	3.8

Examinee: _____ NRC Examiner: _____

Facility Evaluator: _____ Date: _____

Method of testing:

Simulated Performance _____ Actual Performance ___X___

Classroom _____ Simulator ____X____ Plant _____

READ TO THE EXAMINEE:

I will explain the initial conditions, which steps to simulate or discuss, and provide initiating cues. When you complete the task successfully, the objective for this job performance measure will be satisfied.

Initial Conditions:

Plant shutdown with the Main Steam system in operation with the MSIV's open.

Task Standard:

Manually isolates Group 1 per 4001.02 and isolates 'B' MSL using F098B

Required Materials: Panel key-lock switch keys

CLINTON POWER STATION

JPM Worksheet - B.1.e, Manually Perform a Group 1 Isolation - Alt Path

General References:

CPS No. 4001.02, AUTOMATIC ISOLATION
CPS No. 4001.02C001, AUTOMATIC ISOLATION CHECKLIST

Initiating Cue:

An emergency condition exists. A Group 1 isolation is required but failed to occur automatically. Manually perform ONLY a Group 1 isolation.

Time Critical Task: NO

Validation Time: 5 minutes

Simulator Set-up Conditions:

1. Any IC with the Main Steam system in operation with all Gp I isolation valves open.
2. MS08B: B21F022B to 100% (Open)
3. MS08F: B21F028B to 50% CONDITIONAL: when Handswitch taken to CLOSE
4. Override the CRVICS buttons.

START TIME _____

CLINTON POWER STATION

JPM Worksheet - B.1.e, Manually Perform a Group 1 Isolation - Alt Path

PERFORMANCE INFORMATION

_*__ Performance step: (Denote critical steps with an asterisk)

4001.02C001, Group #1 Main Steam Lines and Drains:

MANUALLY CLOSES THE FOLLOWING VALVES USING THEIR RESPECTIVE CONTROL SWITCHES:

1. 1B21-F022B
2. 1B21-F028B
3. 1B21-F022D
4. 1B21-F028D
5. 1B21-F022A
6. 1B21-F028A
7. 1B21-F022C
8. 1B21-F028C
9. 1B21-F067B
10. 1B21-F067D
11. 1B21-F067A
12. 1B21-F067C
13. 1B21-F016
14. 1B21-F019

Standard: Applicant places keys in key-lock switches and turns switch from AUTO to CLOSE for the following valves:

1. 1B21-F022B
2. 1B21-F028B
3. 1B21-F022D, verifies only GREEN light ON
4. 1B21-F028D, verifies only GREEN light ON
5. 1B21-F022A, verifies only GREEN light ON
6. 1B21-F028A, verifies only GREEN light ON
7. 1B21-F022C, verifies only GREEN light ON
8. 1B21-F028C, verifies only GREEN light ON

Applicant CLOSES the following Motor Operated Valves:

1. 1B21-F067B, verifies only GREEN light ON
2. 1B21-F067D, verifies only GREEN light ON
3. 1B21-F067A, verifies only GREEN light ON
4. 1B21-F067C, verifies only GREEN light ON
5. 1B21-F016, verifies only GREEN light ON

6. 1B21-F019, verifies only GREEN light ON

Comment:

SAT_____ UNSAT_____

_____ Performance step: (Denote critical steps with an asterisk)

Applicant reports the following valves failed to close:

1. 1B21-F022B, recognizes RED light is ON
2. 1B21-F028B, recognizes RED and GREEN lights ON

Standard: Applicant reports the valves failed to close.

CUES: If the applicant requests directions from the SRO, direct the applicant to manually isolate the "B" Main Steam line.

If the applicant recommends using CRVICS manual initiation, inform the applicant not to use the pushbuttons as it will complicate plant conditions.

If applicant attempt to use CRVICS pushbuttons then the examiner as the SRO should stop applicant from using pushbuttons and inform applicant it will complicate plant conditions.

Comment:

SAT_____ UNSAT_____

__*___ Performance step: (Denote critical steps with an asterisk)

Closes motor operated isolation F098B

Standard: Applicant places key in the keylock switch and turns switch from OPEN to CLOSE. Green light ON for F098B

Note: Valve 1B21-F098B is a slow closing MOV. (1 - 2 minutes)

Comment:

SAT_____ UNSAT_____

CLINTON POWER STATION

JPM Worksheet - B.1.e, Manually Perform a Group 1 Isolation - Alt Path

---

_____ Performance step: (Denote critical steps with an asterisk)

Reports to CRS that 'B' Main Steam Line is isolated

Standard: Main Steam is isolated

Comment:

SAT_____ UNSAT_____

Terminating cue: Valve 1B21-F098B is CLOSED and Main Steam is Isolated.

STOP TIME _____

CLINTON POWER STATION

JPM Worksheet - B.1.e, Manually Perform a Group 1 Isolation - Alt Path

VERIFICATION OF COMPLETION

Job Performance Measure No. _____

Examinee's Name:

Examiner's Name:

Date performed:

Facility Evaluator:

Number of attempts:

Time to complete:

Question Documentation:

Question:_____

_____

_____

Response:_____

_____

_____

_____

Result: SAT or UNSAT

Examiner's signature and date: _____ _____

CLINTON POWER STATION

JPM Worksheet - B.1.e

INITIATING CUE:

The plant is shut down with the Main Steam system in operation with the MSIVs open. An emergency condition exists. A Group 1 isolation is required but failed to occur automatically. Manually perform ONLY a Group 1 isolation.

CLINTON POWER STATION

JPM Worksheet - B.1.f, Inject to the RPV Using SX Through LPCI

Facility: Clinton Power Station Task No:014205C522

Task Title: Inject to the RPV using SX Through LPCI

Job Performance Measure No:014205J001

		Importance Rating	
K/A SYSTEM NUMBER	K/A NUMBER	RO	SRO
203000 - Reactor Low Water Level	A4.02	4.1	4.1

Applicant _____ NRC Examiner: _____

Facility Evaluator: _____ Date: _____

Method of testing:

Simulated Performance _____ Actual Performance ____x____

Classroom _____ Simulator _____x_____ Plant _____

READ TO THE EXAMINEE

I will explain the initial conditions, which steps to simulate or discuss, and provide initiating cues. When you complete the task successfully, the objective for this job performance measure will be satisfied.

Initial Conditions:

The plant is shutdown following an a LOCA. All ECCS is injecting, except RHR-B, due to pump failure.

Task Standard:

Inject Shutdown Service Water into the Reactor Vessel.

Required Materials: Panel key-lock switch key

CLINTON POWER STATION

JPM Worksheet - B.1.f, Inject to the RPV Using SX Through LPCI

General References:

CPS No. 4411.03, EOP INJECTION/FLOODING SOURCES, Appendix A, 2.0

Initiating Cue:

Inject to the Reactor Pressure Vessel using Shutdown Service Water through RHR 'B' per CPS No. 4411.03, Appendix A, step 2.0. LPCI has been injecting for greater than 10 minutes.

Time Critical Task: NO

Validation Time: 13 minutes

Simulator Set-up Conditions:

Shutdown IC with the Reactor de-pressurized.(IC-13).
Start Shutdown Service Water Pumps 'A', 'B', and 'C'.

START TIME:_____

CLINTON POWER STATION

JPM Worksheet - B.1.f, Inject to the RPV Using SX Through LPCI

PERFORMANCE INFORMATION

__*__ Performance step: (Denote critical steps with an asterisk)

2.1 Shut 1E12-F003B, RHR B Hx Outlet Valve. (Hold switch to close valve.)

Standard: Green light ON for 1E12-F003B.

Comment: Throttle valve - takes approximately 1 - 2 minutes to stroke.

SAT_____UNSAT_____

__*__ Performance step: (Denote critical steps with an asterisk)

2.2 Shut 1E12-F048B, RHR B Hx Bypass Valve. (Hold switch to close valve.)

NOTE
1E12-F048B response to ECCS logic signals: ° LPCI: OPEN for 10 minutes, then can reposition. ° CNMT Spray: CLOSE, reset needed to reposition. ° LPCI & CNMT Spray: Cycles OPEN/CLOSE until 10 min. LPCI timer times out.

Standard:

Applicant turns switch to CLOSE 1E12-F048B, and verifies Green light ON.

Note: This is a throttle valve and takes several minutes to close.

Comment:

SAT_____UNSAT_____

CLINTON POWER STATION

JPM Worksheet - B.1.f, Inject to the RPV Using SX Through LPCI

_____ Performance step: (Denote critical steps with an asterisk)

2.3 Verify SX running per CPS No. 3211.01, SHUTDOWN SERVICE WATER (SX).

Standard:

Applicant verifies that Division II SX pump is running.

- SX "1B" pump red light is ON.
- SX discharge pressure is between 150 and 175 psig.
- PSW to SX isolation valve, SX014B, is closed, GREEN light ON.
- SX pump room "B" supply fan is running, RED light is ON.
- SX pump minimum flow DG 1B HX outlet valve, SX 63B is open.

Cue: If asked, inform the applicant to defer isolating non-essential SX loads.

If asked, inform the applicant there is no need to cross-connect Div I and Div II SX.

Notes: Applicant is not required to refer to CPS No. 3211.01 (SX) to verify SX running.

SX pressure may be slightly greater than 180 psig.

Comment:

SAT_____UNSAT_____

_____ Performance step: (Denote critical steps with an asterisk)

2.4 Verify SHUT:

- 1E12-F024B, RHR B Test Valve To Suppr Pool.
- 1E12-F014B, SSW Inlet RHR B Hx Valve.
- 1E12-F053B, RHR B To Feedwater S/D Cooling Rtrn Vlv.
- 1E12-F023, RHR B Supp To Rx Head Spray Valve.
- 1E12-F028B, RHR B To CNMT Spray B Shutoff Vlv.

Standard: Applicant verifies Green lights ON for:

- 1E12-F024B, RHR B Test Valve To Suppr Pool.
- 1E12-F014B, SSW Inlet RHR B Hx Valve.
- 1E12-F053B, RHR B To Feedwater S/D Cooling Rtrn Vlv.
- 1E12-F023, RHR B Supp To Rx Head Spray Valve.
- 1E12-F028B, RHR B To CNMT Spray B Shutoff Vlv.

Comment:

SAT_____UNSAT_____

____ Performance step: (Denote critical steps with an asterisk)

2.5 Verifies open 1E12-F027B, RHR B To CNMT Outbd Isol Valve.

Standard: Applicant verifies 1E12-F027B, is open, verifies Red light ON.

Comment:

SAT_____UNSAT_____

__*__ Performance step: (Denote critical steps with an asterisk)

2.6 Open 1E12-F096, Service Water To RHR Blocked Supp Vlv. (Key operated switch)

Standard: Applicant inserts key into keylock and turns switch to OPEN 1E12-F096, verifies Red light ON.

Comment: Long stroke time approximately 1 - 2 minutes.

SAT_____UNSAT_____

__*__ Performance step: (Denote critical steps with an asterisk)

2.7 Open 1E12-F094, Service Water To RHR B Supp Vlv.

Standard: Applicant turns switch to OPEN 1E12-F094, verifies Red light ON.

Comment:

SAT_____UNSAT_____

__*__ Performance step: (Denote critical steps with an asterisk)

2.8 Open 1E12-F042B, LPCI Fm RHR B Shutoff Valve

Standard: Applicant turns switch to OPEN 1E12-F042B, verifies Red light ON.

Comment:

SAT_____UNSAT_____

_____ Performance step: (Denote critical steps with an asterisk)

2.9 Monitor SX flow on flow indicator 1E12-R603B, RHR Pump B Flow.

Standard: Verifies SX flow on 1E12-F603B

Note: SX flow rises to approximately 1000 gpm on instrument

Comment:

SAT _____ UNSAT _____

Terminating cue: Shutdown Service Water is being injected into the Reactor Vessel.

SAT _____ UNSAT _____

STOP TIME: _____

CLINTON POWER STATION

JPM Worksheet - B.1.f, Inject to the RPV Using SX Through LPCI

VERIFICATION OF COMPLETION

Job Performance Measure No. _____

Examinee's Name:

Examiner's Name:

Date performed:

Facility Evaluator:

Number of attempts:

Time to complete:

Question Documentation:

Question: _____

_____

_____

_____

CLINTON POWER STATION

JPM Worksheet - B.1.f, Inject to the RPV Using SX Through LPCI

Response:_____

_____

_____

_____

Result: SAT or UNSAT

Examiner's signature and date: _____ _____

CLINTON POWER STATION

JPM Worksheet - B.1.f, Inject to the RPV Using SX Through LPCI

INITIATING CUE:

The plant is shutdown following an accident.

Currently no inject source is available to makeup to the RPV.

Inject to the Reactor Pressure Vessel using Shutdown Service Water through RHR 'B' per CPS No. 4411.03

CLINTON POWER STATION
JPM Worksheet - B.2.b,
Cross Connect DC Distribution Panels 1E and 1F per CPS No. 3503.01

Facility: Clinton Power Station Task No:041263J001

Task Title: Cross Connect DC Distribution Panels 1E and 1F per CPS No. 3503.01

Job Performance Measure No:041263J001

K/A Reference:

263000	A4.01	3.3	3.5

Examinee: _____ NRC Examiner: _____

Facility Evaluator: _____ Date: _____

Method of testing:

Simulated Performance ____X____ Actual Performance _____

Classroom _____ Simulator _____ Plant __X__

READ TO THE EXAMINEE

I will explain the initial conditions, which steps to simulate or discuss, and provide initiating cues. When you complete the task successfully, the objective for this job performance measure will be satisfied.

Initial Conditions:

100% power, 1E battery charger is to be tagged out for corrective maintenance.

Task Standard:

Cross Connect 125 VDC Distribution Panels 1E and 1F, with 1F supplying, per CPS No. 3503.01, Section 8.2.6.3.

CLINTON POWER STATION
JPM Worksheet - B.2.b,
Cross Connect DC Distribution Panels 1E and 1F per CPS No. 3503.01

Required Materials: Provide the applicant with a copy of 3503.01.

General References:

CPS No. 3503.01, BATTERY AND DC DISTRIBUTION

Initiating Cue:

You are to cross-connect DC Distribution Panels 1E and 1F with 1F supplying per CPS No. 3505.01, Section 8.2.6.3.

Time Critical Task: YES/**NO**

Validation Time: 8 minutes

Simulator Set-up Conditions:

None

Start Time_____

PERFORMANCE INFORMATION

CAUTION
Do not exceed tie breakers amp rating of 225 amps.

NOTE
DC MCC 1E and 1F Tie Breakers must both be ON to complete the crosstie.

_____ Performance step: (Denote critical steps with an asterisk)

8.2.6.3 Verify 1E and 1F voltages are approximately equal.

Standard: The operator locates and reads the voltage indicated on 125 VDC Distribution Panels 1E and 1F.

Cue: The voltages are as indicated on the meters.

Comment: If the panel(s) is/are de-energized due to actual plant conditions, inform the applicant that the voltages are approximately 134 VDC.

SAT_____UNSAT_____

___*___ Performance step: (Denote critical steps with an asterisk)

8.2.6.3 b) Place the following breakers to ON:
1) 125 VDC Dist Pnl 1F tie Breaker at DC MCC 1E cub 6B
2) 125 VDC Dist Pnl 1E tie Breaker at DC MCC 1F cub 7A

Standard: The operator positions the breaker control handle in the UP position at DC MCC 1E cub 6B.
The operator rotates the breaker control handle counterclockwise to the ON position at DC MCC 1F cub 7A.

Cue: The breaker control handle is in the UP position (at DC MCC 1E cub 6B).
The breaker control handle rotates counterclockwise and is in the ON position (at DC MCC 1F cub 7A)

Comment: These breakers may be positioned in either sequence.

SAT_____UNSAT_____

_____ Performance step: (Denote critical steps with an asterisk)

8.2.6.3 c) Verify the breakers in the previous sub-step did not trip when closed:
1) 125 VDC Dist Pnl 1F tie Breaker at DC MCC 1E cub 6B
2) 125 VDC Dist Pnl 1E tie Breaker at DC MCC 1F cub 7A

Standard: The operator verifies the breakers at DC MCC 1E cub 6B and DC MCC 1F cub 7A are CLOSED.

Cue: The breakers at DC MCC 1E cub 6B and DC MCC 1F cub 7A are CLOSED.

Comment:

SAT_____UNSAT_____

CAUTION

The distribution panel 1E supply breaker is located **INSIDE** the distribution panel on DC MCC 1E cub 4A.

___*__Performance step: (Denote critical steps with an asterisk)

8.2.6.3 d) Place 125 VDC Dist Pnl 1E Supply Breaker in OFF at DC MCC 1E cub 4A.

Standard: The operator opens the 1E distribution panel door and moves the supply breaker handle to the DOWN position.

Cue: The 1E supply breaker handle moves downward and latches in the DOWN position.

Comment:

SAT_____UNSAT_____

Terminating cue:

DC Distribution Panels 1E and 1F are cross-tied with Distribution Panel 1F supplying.

CLINTON POWER STATION
JPM Worksheet - B.2.b,
Cross Connect DC Distribution Panels 1E and 1F per CPS No. 3503.01

VERIFICATION OF COMPLETION

Job Performance Measure No. _____

Examinee's Name:

Examiner's Name:

Date performed:

Facility Evaluator:

Number of attempts:

Time to complete:

Question Documentation:

Question:_____
_____
_____

Response:_____
_____
_____
_____

Result: SAT or UNSAT

Examiner's signature and date: _____ _____

INITIATING CUE

You have been directed by Main Control Room personnel to cross-connect DC Distribution Panels 1E and 1F with 1F supplying.

JPM Worksheet B.2.c
Transfer of CCW Temp Reg. Valve from Auto To Manual Hand Wheel per CPS No. 3203.01

Facility: Clinton Power Station Task No: 044208C506

Task Title: Transfer of CCW Temp Reg. Valve from Auto To Manual Hand Wheel

Job Performance Measure No: New K/A Reference: 400000A203

Applicability: RO X SRO X

Examinee: _____ NRC Examiner: _____

Facility Evaluator: _____ Date: _____

Method of testing:

Simulated Performance X Actual Performance _____

Classroom _____ Simulator _____ Plant X

READ TO THE EXAMINEE

I will explain the initial conditions, which steps to simulate or discuss, and provide initiating cues. When you complete the task successfully, the objective for this job performance measure will be satisfied.

Initial Conditions:

CCW Heat Exchanger 1A Valve 1WS018A, Temperature Controller 1TIC-CC045 has failed to maintain CC temperature and is in Manual at 1PA05J. The B CCW Heat Exchanger is out of service for tube cleaning.

Task Standard:

CCW temperature controlled by 1WS018A Manual Handwheel

Required Materials: None

General References:

CPS No. 3203.01 Component Cooling Water (CC)

JPM Worksheet B.2.c

Transfer of CCW Temp Reg. Valve from Auto To Manual Hand Wheel per CPS No. 3203.01

Initiating Cue:

CCW Heat Exchanger 1A Valve 1WS018A, Temperature Controller 1TIC-CC045 has failed to maintain CC temperature and is in Manual at 1PA05J. The B CCW Heat Exchanger is out of service for tube cleaning. Place the A CCW Temp Reg Valve in Manual and Control CC Temperature.

Time Critical Task: NO

Validation Time: 8 minutes

Start Time:_____

JPM Worksheet B.2.c
Transfer of CCW Temp Reg. Valve from Auto To Manual Hand Wheel per CPS No. 3203.01

PERFORMANCE INFORMATION

NOTE: Provided in Initial Conditions - Step 8.1.4.1.1, 1TIC-CC045 in Manual at 1PA05J

___*___ Performance step: (Denote critical steps with an asterisk)

Step 8.1.4.1.2 Isolate Instrument Air to 1WS018A by closing the following valves

a) 1IA190, 1WS018A Instrument Air Inlet Block Valve
b) 1IA842A, 1WS018A IA Inlet Isol Valve

Standard: a) Applicant indicates turning handwheel for valve 1IA190 clockwise
b) Applicant indicates turning handwheel for valve 1IA842A clockwise.

Cue: After several turns clockwise cue valve CLOSED.

Comment:

SAT_____UNSAT_____

___*_____ Performance step: (Denote critical steps with an asterisk)

Step 8.1.4.1.3 Equalize pressure across the diaphragm by opening 1TYCC045EV, diaphragm equalizing valve.

Standard: Applicant indicates turning handwheel for valve 1TYCC045EV counter-clockwise.

Cue: After several turns counter-clockwise cue valve OPEN.

Comment: Procedure Cautions, Operation of 1WS018A in the MANUAL HANDWHEEL mode, without equalizing pressure across the diaphragm, will prevent closing the valve and may damage the diaphragm.

SAT_____UNSAT_____

JPM Worksheet B.2.c
Transfer of CCW Temp Reg. Valve from Auto To Manual Hand Wheel per CPS No. 3203.01

__*_____ Performance step: (Denote critical steps with an asterisk)

Step 8.1.4.1.4 Insert the pin into the valve actuator which places the 1WS018A in the Manual handwheel Mode.

NOTE: Label on valve 1WS018A says "Engage: align notch in pointer to hole in gear and push ring."

Standard:

Applicant indicates inserting pin into valve actuator for 1WS018A.

Comment:

SAT_____UNSAT_____

_____ Performance step: (Denote critical steps with an asterisk)

Coordinates open of 1WS018A with MCR to reduce CC temperature by opening valve.

Cue: As MCR respond that CC temperature is on a slow trend down following opening of 1WS018A

Standard: Applicant operates 1WS018A handwheel counter-clockwise to open valve. Applicant contacts Main Control Room to adjust CC temperature.

Comment:

SAT_____UNSAT_____

Terminating cue: 1WS018A in being operated in the Manual Handwheel Mode.

SAT_____UNSAT_____

Stop Time_____

JPM Worksheet B.2.c
Transfer of CCW Temp Reg. Valve from Auto To Manual Hand Wheel per CPS No. 3203.01

VERIFICATION OF COMPLETION

Job Performance Measure No. _____

Examinee's Name:

Examiner's Name:

Date performed:

Facility Evaluator:

Number of attempts:

Time to complete:

Question Documentation:

Question:_____
_____
_____

Response:_____
_____
_____
_____

Result: SAT or UNSAT

Examiner's signature and date: _____ _____

JPM Worksheet B.2.c

Transfer of CCW Temp Reg. Valve from Auto To Manual Hand Wheel per CPS No. 3203.01

Initiating Cue:

The B CCW Heat Exchanger is out of service for tube cleaning.
CCW Heat Exchanger 1A valve 1WS018A, Temperature Controller 1TIC-CC045 has failed to maintain CC temperature and is in Manual at 1PA05J.
Place the A CCW Temp Reg. Valve in the Manual Handwheel Mode of Operation.

Add procedure steps to JPM

Admin JPM Worksheet RO A.1.a Core Thermal Limits

Facility: Clinton Task No: 011298C524

Task Title: Interpret Core Thermal Limits

Job Performance Measure No: NEW K/A Reference: 2.1.25

Examinee: _____ NRC Examiner: _____

Facility Evaluator: _____ Date: _____

Method of testing:

Simulated Performance _____ Actual Performance _____

Classroom X Simulator _____ Plant _____

READ TO THE EXAMINEE

I will explain the initial conditions, which steps to simulate or discuss, and provide initiating cues. When you complete the task successfully, the objective for this job performance measure will be satisfied.

Initial Conditions:

The plant is in a normal 100% power lineup

Task Standard:

All Core Thermal Limit violations have been identified.

Required Materials:

3D Monicore Periodic Log

General References:

CPS 9820.01 Power Distribution Limits, Step 8.0, Procedure

Initiating Cue:

The CRS has directed you to review a 3D Monicore Periodic Log.

Time Critical Task: NO

Validation Time: 15 minutes

Start Time: _____

PERFORMANCE INFORMATION

_____ Performance step:

Step 1: Determine the highest MFLCPR value.

Standard:

Applicant determines the highest MFLCPR value is ≤ 1.0.

Comment:

SAT_____UNSAT_____

_____ Performance step:

Step 2: Determine the highest MFLPD value.

Standard:

Applicant determines the highest MFLPD value is ≤ 1.0.

Comment:

SAT_____UNSAT_____

____*____ Performance step:

Step 3: Determine the highest MAPRAT value.

Standard:

Applicant determines the highest MAPRAT value is out of specification .
Indicated value is 1.001

Comment:

SAT_____UNSAT_____

Terminating cue:

MAPRAT greater than 1.000 has been reported to the CRS.

Stop Time:_____

VERIFICATION OF COMPLETION

Job Performance Measure No. _____

Examinee's Name:

Examiner's Name:

Date performed:

Facility Evaluator:

Number of attempts:

Time to complete:

Question Documentation:

Question:_____
_____
_____
_____

Response:_____
_____
_____
_____
_____

Result: SAT or UNSAT

Examiner's signature and date: _____ _____

APPLICANTS COPY

Initial Conditions:

The plant is in a normal 100% power lineup

Initiating Cue:

The CRS has directed you to review a 3D Monicore Periodic Log.

CLINTON CYCLE 6
3D MONICORE
PERIODIC LOG

SEQUENCE NO 23
8-JUN-1996 20:58 CALCULATED
8-JUN-1996 20:59 PRINTED
CASE ID FMLD1960608205855
RESTART FMLD1960608195845
LPRM SHAPE - FULL CORE

CORE PARAMETERS			CALC RESULTS		LOAD LINE SUMMARY	
POWER	MWT	2890.				
POWER	MWE	967.				
FLOW	MLB/HR	75.844				
FPAPDR		0.824				
SUBC	BTU/LB	23.49	Keff	1.0000		
PR	PSIa	1027.9	XE WORTH %	-2.52	CORE POWER	99.9%
CORE	MWD/sT	20850.8	XE/RATED	1.00	CORE FLOW	89.8%
CYCLE	MWD/sT	8741.6				
MCPR		1.404			LOAD LINE	107.2%

CORRECTION FACTOR: MFLCPR= 1.000 MFLPD= 1.000 MAPRAT= 0.999
OPTION: ARTS DUAL LOOP MANUAL FLOW MCPRLIM= 1.240

MOST LIMITING LOCATIONS (NON-SYMMETRIC)

MFLCPR	LOC	MFLPD	LOC	MAPRAT	LOC	PCRAT	LOC
0.883	37-28	0.823	17-22-18	1.001	7-28- 5	0.798	41-28-16
0.860	39-26	0.812	7-28- 5	0.817	15-30-16	0.798	19-28-16
0.856	41-28	0.812	41-28-16	0.817	11-22-13	0.797	7-28- 5
0.853	11-28	0.802	19-28-16	0.816	19-26-16	0.791	39-22-20
0.840	13-32	0.796	15-38-18	0.813	19-30-15	0.782	9-22-13
0.839	9-26	0.795	21-26-16	0.803	7-26-12	0.779	11-20-13
0.837	11-20	0.793	17-26-16	0.802	9-36-13	0.779	17-26-16
0.830	39-22	0.789	9-22-13	0.798	11-30-11	0.777	11-28-15
0.827	7-28	0.789	11-20-13	0.796	9-26- 5	0.776	13-32-16
0.823	9-22	0.788	13-32-16	0.795	39-22-20	0.774	47-26-12

SEQ. B-2 C=MFLCPR D=MFLPD M=MAPRAT P=PCRAT *=MULTIPLE

```
53
49
  L
45                      12      12
41
  L
37              12      10      10      12
33
  L
29        M                             C   P
25
  L
21              12D     10      10      12
17
  L
13                      12      12
09
  L
05    L       L       L       L       L       L
   04  08  12  16  20  24  28  32  36  40  44  48  52
```

CORE AVE AXIAL

NOTCH	REL PW	LOC
	0.238	25
00	0.446	24
02	0.804	23
04	0.963	22
06	1.056	21
08	1.158	20
10	1.191	19
12	1.163	18
14	1.182	17
16	1.220	16
18	1.215	15
20	1.187	14
22	1.212	13
24	1.207	12
26	1.181	11
28	1.170	10
30	1.166	09
32	1.131	08
34	1.085	07
36	1.072	06
38	1.050	05
40	0.998	04
42	0.920	03
44	0.749	02
46	0.237	01

CORE AVERAGE RADIAL POWER DISTRIBUTION

RING #	1	2	3	4	5	6	7
REL PW	0.890	1.084	1.113	1.102	1.155	1.145	0.727

CLINTON CYCLE 6 INSTRUMENT READINGS/STATUS SEQUENCE NO 23
CALIBRATED LPRM READINGS 8-JUN-1996 20:58 CALCULATED
8-JUN-1996 20:59 PRINTED

47D		40.1	49.8	55.7	45.9	30.2
C		57.0	59.8	60.3	64.5	43.0
B		61.2	63.6	60.9	69.2	41.9
A		51.1	54.9	49.5	63.0	27.7
39D	35.4	51.3	58.4	61.1	57.5	46.0
C	55.8	62.7	60.3	59.6	66.5	67.9
B	60.0	65.2	60.7	57.0	66.7	70.2
A	52.7	61.1	50.4	44.4	54.7	63.8
31D	39.9	51.6	55.8	56.0C	55.7	48.5
C	63.7	71.1	68.3	63.1	72.6P	70.4
B	69.6	71.2	66.7	59.2	72.9	73.4
A	67.6M	69.0	61.1	45.4	71.1	71.8
23D	40.0	54.3	58.1	57.9	59.5	48.0
C	62.2	67.3D	63.7	59.2	66.8	69.0
B	67.1	67.1	61.4	56.9	66.6	71.1
A	66.5	58.6	48.7	44.2	55.6	66.1
15D	28.5	46.2	55.5	57.2	0.0	39.4
C	42.4	63.6	62.8	59.1	65.4	59.1
B	43.2	68.6	61.9	57.4	67.6	62.2
A	0.0	61.7	49.9	44.3	64.3	50.4
07D		29.1	39.3	40.7	36.6	
C		41.4	58.6	56.6	54.5	
B		42.3	64.8	61.8	58.3	
A		31.2	57.2	55.6	48.4	
	06	14	22	30	38	46

CASE ID FMLD1960608205855
LPRM SHAPE - FULL CORE

OF TIPS REJECTED: 1

FAILED SENSORS:
LPRM (2 SIGNAL FAILED)
615A 3815D
LPRM (0 PANACEA REJECTED)
OTHER SENSORS (0 TOTAL)
SUB RODS
NONE

T = TIP RUN RECOMMENDED
C = MFLCPR LOCATION
M = MAPRAT LOCATION
D = MFLPD LOCATION
P = PCRAT LOCATION
* = MULTIPLE LIMIT

CORE SUMMARY

CORE POWER	99.9%	CALC SUB FLOW	91.3%	DP MEAS PSI	15.52
CORE FLOW	89.8%	OPER SUB FLOW	-1.2%	DP CALC PSI	20.52
LOAD LINE	107.2%	FLOW BASIS	MEAS	FEEDWTR FLOW MLB/HR	12.35

APRM CALIBRATION

	A	B	C	D
READING	100.4	100.6	100.2	100.2
AGAF	0.994	0.992	0.997	0.997

TIP RUNS RECOMMENDED
STRINGS: NONE

Facility: Clinton Task No: 013299C003

Task Title: Verify Plant Parameters for Reactor Mode Change

Job Performance Measure No: NEW K/A Reference: 2.1.23

Examinee: _____ NRC Examiner: _____

Facility Evaluator: _____ Date: _____

Method of testing:

Simulated Performance X Actual Performance _____

Classroom _____ Simulator X Plant _____

READ TO THE EXAMINEE

I will explain the initial conditions, which steps to simulate or discuss, and provide initiating cues. When you complete the task successfully, the objective for this job performance measure will be satisfied.

Initial Conditions:

Reactor Pressure 936 psig., Reactor Power 8 - 10%.

CPS 3002.01 DONE THROUGH 8.6.4.C

Task Standard:

Identify that plant conditions do not support changing to Mode 1

Required Materials:

CPS No. 3002.01, Heatup and Pressurization

General References:

Simulator Setup Conditions:

1. Initialize simulator to IC that is ready for Mode 1
2. Insert malfunction ~~NM12B APRM B downscale~~
   LPRM_1439I_Action 1 - AFluxlevel @ 0.42

Initiating Cue:

The CRS has directed you to review plant conditions to ensure they support transferring the Reactor mode Switch to RUN and complete CPS 3002.01 steps 8.6.4 d) and e)

Time Critical Task: NO

Validation Time: 5 minutes

Start Time: _____

PERFORMANCE INFORMATION

_____ Performance step:

Step 1: Verifies Plant Parameters:
1) Reactor Power 8 - 10%.
2) Reactor Pressure 936 psig
3) Turbine Bypass Valves open

Standard:

Applicant determines plant parameters meet requirements
Power
Pressure
Bypass Valve

_____ * Performance step:

Step 2: Verifies proper IRM & APRM overlap by verifying all operable APRMs read between 5% and 12% with all operable IRMs on scale.

Standard:

Applicant determines that ~~one~~ B APRM is reading ~~below 5%~~. ~~2.5~~ 13%

_____ Performance step:

Step 3: Verify/place all MOV TEST PREP switches in normal.

Standard:

Applicant verifies all MOV TEST PREP switches are in normal.

Places CY SYS DIV 2 IN NORMAL

CY SYS DIV 2 IN TEST

Terminating cue:

The APRM reading less than 5% has been reported to the CRS, and that the requirements to enter Mode 1 have not been met.

Stop Time:_____

VERIFICATION OF COMPLETION

Job Performance Measure No. _____

Examinee's Name:

Examiner's Name:

Date performed:

Facility Evaluator:

Number of attempts:

Time to complete:

Question Documentation:

Question:_____

_____

_____

_____

Response:_____

_____

_____

_____

_____

Result: SAT or UNSAT

Examiner's signature and date: _____ _____

APPLICANTS COPY

Initiating Cue:

The CRS has directed you to review plant conditions to ensure they support transferring the Reactor mode Switch to RUN and complete CPS 3002.01 steps 8.6.4 d) and e)

JPMs A.2 and A.3 were retained. No submittal from the station for those JPMs.

Facility: Clinton Task No: 045200C511

Task Title: Make Emergency Plan Notification to the Illinois Emergency Management Agency - Alternate path

Job Performance Measure No: New K/A Reference: G 2.4.43

Examinee: _____ NRC Examiner: _____

Facility Evaluator: _____ Date: _____

Method of testing:

Simulated Performance X Actual Performance _____

Classroom X Simulator _____ Plant X

READ TO THE EXAMINEE

I will explain the initial conditions, which steps to simulate or discuss, and provide initiating cues. When you complete the task successfully, the objective for this job performance measure will be satisfied.

Initial Conditions:

A condition exists where a Notification of Unusual Event has been declared.

Task Standard:

Applicant has simulated notifying the Illinois Emergency Management Agency by alternate communications, normal communications fails.

Required Materials: Completed NARS worksheet

General References:

EC-07 Emergency Plan Notification and attachments

Initiating Cue:

A condition exists where a Notification of Unusual Event is declared. The Nuclear Accident Reporting System Form is filled out and it is ready for being reported to offsite agencies. Make the report to Off-site agencies per EC-07.

Time Critical Task: **YES**

Validation Time: 15 minutes

Start Time: _____

PERFORMANCE INFORMATION

_____ Performance step: (Denote critical steps with an asterisk)

Step 1: Per 4.1.4, Prepare Attachment 1, NUCLEAR ACCIDENT REPORTING SYSTEM FORM (NARS form) (refer to Attachment 4 and Form 1).

Cue:

Provide completed Attachment 1, NARS form.

Standard:

NA activity is already completed

Comment:

SAT_____UNSAT_____

_____ Performance step: (Denote critical steps with an asterisk) Move to Step 3

Step 2: **Within 15 minutes** of declaring the emergency classification, notify the Illinois Emergency Management Agency (IEMA) and the Illinois Department of Nuclear Safety (IDNS) Dispatcher. Use the Green NARS phone and dial 98. If the initial emergency classification is General Emergency, use dial code 36 and ensure the DeWitt County Sheriff's Dispatcher is also on the line.

Cue:

Just prior to the applicant picking up the GREEN NARS PHONE inform the Applicant there is no response from the green NARS phone from IEMA/IDNS

Standard:

Applicant recognizes the Green NARS phone is not responding

Comment:

SAT_____UNSAT_____

__*__ Performance step: (Denote critical steps with an asterisk)

Step 3: IF time critical task starts here.

the Nuclear Accident Reporting System phone is inoperative,

THEN

use one of the following commercial telephone numbers:

1-800-782-7860 or (IEMA)
1-217-782-7860

Standard:

Applicant Locates phone and demonstrates how to connect to an outside line by dialing 9 (applicable to the onsite phone) then the commercial phone number. Dialing 9 doesn't apply when using a direct line.

Applicant simulates dialing one of the commercial telephone numbers.

Comment:

SAT_____UNSAT_____

_____ Performance step: (Denote critical steps with an asterisk)

Step 4: NOTE
IEMA should pass on notifications to IDNS if the NARS phone has failed. However, this action should be verified with the IEMA dispatcher.

Standard:

Applicant discusses with IEMA Dispatcher to contact IDNS

Cue:

Evaluator answer as the IEMA Dispatcher and respond to discussion about notification of IDNS, during roll call.

Comment:

SAT_____UNSAT_____

_____ Performance step: (Denote critical steps with an asterisk)

Step 5: NOTE Phone number

The MCR direct line should be given to IEMA for callback verification if the call is initiated from the MCR.

Standard:

Applicant provides IEMA Dispatcher the outside phone number on the NARS form This will be provided on the report of the NARS form.

Comment:

SAT_____UNSAT_____

---

*_____ Performance step: (Denote critical steps with an asterisk)

Step 6: Report NARS form data (refer to Attachment 4)

Standard: Must report #2 #3

Applicant transmits data from the NARS form. ~~without error.~~

Cue: Repeat back NARS form reports to Applicant.

Use the copy of the NARS form to follow the report.

Comment:

SAT_____UNSAT_____

Terminating cue:

Applicant has simulated contacting the IEMA Dispatcher and making the NARS form report.

Stop Time:_____

VERIFICATION OF COMPLETION

Job Performance Measure No. _____

Examinee's Name:

Examiner's Name:

Date performed:

Facility Evaluator:

Number of attempts:

Time to complete:

Question Documentation:

Question:_____
_____
_____
_____

Response:_____
_____
_____
_____
_____

Result: SAT or UNSAT

Examiner's signature and date: _____ _____

APPLICANTS COPY

Initial Conditions:

A condition exists where a Notification of Unusual Event has been declared.

Initiating Cue:

A condition exists where a Notification of Unusual Event is declared. The nuclear Accident Reporting System Form is filled out and it is ready for being reported to offsite agencies. Make the report to Off-site agencies per EC-07.

CLINTON POWER STATION

JPM Worksheet - B.1.a, Reset a Reactor Scram per CPS No. 4100.01 - Alt Path

---

Facility: Clinton Power Station Task No: 015200C638

Task Title: Reset a Reactor Scram per CPS No. 4100.01 - Alternate Path

Job Performance Measure No: 015200J043 Modified

K/A Reference:

K/A SYSTEM NUMBER	K/A NUMBER	Importance Rating RO	SRO
212000 - Reactor Protection System	A 4.04	3.9	3.9
	A 4.14	3.8	3.8

Examinee: _____ NRC Examiner:

Facility Evaluator: _____ Date:

Method of testing:

Simulated Performance _____ Actual Performance ___X___

Classroom _____ Simulator ___X___ Plant _____

READ TO THE EXAMINEE

I will explain the initial conditions, which steps to simulate or discuss, and provide initiating cues. When you complete the task successfully, the objective for this job performance measure will be satisfied.

Initial Conditions:

A Reactor Scram has occurred, plant conditions are stable and conditions are satisfied to reset the SCRAM.

Task Standard:

Reactor Scram is reset and then re-scrammed when subsequently two (2) rods drift out.

Required Materials: None

CLINTON POWER STATION

JPM Worksheet - B.1.a, Reset a Reactor Scram per CPS No. 4100.01 - Alt Path

General References:

CPS No. 4100.01, REACTOR SCRAM

Initiating Cue:

A Reactor Scram has occurred. Plant conditions are stable. No fuel failure is indicated. You are directed to reset the Reactor Scram per CPS 4100.01, Reactor Scram.

Time Critical Task: YES/**NO**

Validation Time: 10 minutes 1058 1(min)

Simulator Set-up Conditions:

Initialize to any suitable IC. Place the Reactor Mode Switch in "SHUTDOWN". Drive IN the SRM's and IRM's. Wait approximately 3 minutes for conditions to stabilize, silence, acknowledge, and reset the annunciators. (You may want to Snapshot to IC-40).
Select and enter 2 Rods that will drift to full out upon scram reset.
NEED ROD NUMBERS. 12-41
36-33

Start Time:_____

PERFORMANCE INFORMATION

_*_ Performance step: (Denote critical steps with an asterisk)

4.8 b) Place all four BYP DISCH VOL HI LVL DIV 1(2,3&4) bypass switches to BYPASS.

Standard:

Key-lock switches placed in BYPASS for all four BYP DISCH VOL HI LVL DIV 1(2,3&4) switches (critical).

Non-critical
Applicant silences and acknowledges each of the following P680 annunciators:
5004-1F - DIV 1 DIS VOL HI WTR TRIP BYP
5004-2F - DIV 4 DIS VOL HI WTR TRIP BYP
5005-1F - DIV 2 DIS VOL HI WTR TRIP BYP
5005-2F - DIV 3 DIS VOL HI WTR TRIP BYP

Comment:

SAT _____ UNSAT _____

_*_ Performance step: (Denote critical steps with an asterisk)

4.8.c) When SCRAM & ARI/RPT signals are clear, RESET Reactor Scram and ARI/RPT trips.

Standard:

Applicant depresses all four SCRAM Reset Pushbuttons (critical)

Non-critical

Applicant verifies the following:
1. Blue lights above the Manual Scram pushbuttons are ON
2. ARI/RPT System 1 and 2 Initiated and Seal In Active lights are OFF

NOTE: At anytime following scram reset candidate may notice 2 rods drifting out of core however, it is not expected that the rods will be noticed until the ROD DRIFT Alarm is reset and then re-annunciates.

Comment:

SAT _____ UNSAT _____

___ Performance step: (Denote critical steps with an asterisk)

4.8.d) Verify 1C11-F010/F011 & F180/F181, Scram Discharge Volume Vent and Drain Valves open.

Standard:

Applicant verifies Red lights for 1C11-F010/F011 & F180/F181 are ON and GREEN lights extinguish.

NOTE:

This step may not be performed if drifting rods are noticed

Comment:

SAT _____ UNSAT _____

___ Performance step: (Denote critical steps with an asterisk)

4.8.e) Re-verify all control rods are still fully inserted.

Standard:
Applicant verifies control rod status on Full Core Display

NOTE: Applicant may switch between RAW Data and COOK Data to assist in determining rod position status. Rods are drifting out but may not be noticed until rod drift alarm re-annunciates

Comment: 12-41

36-33

SAT _____ UNSAT _____

___ Performance step: (Denote critical steps with an asterisk)

4.8.f) Clear the RESET DRIFT on the P680 System Mode panel.

Standard:
Applicant depresses the RESET DRIFT Pushbutton on the P680 System Mode panel.
Applicant acknowledges and resets annunciator 5006-4G ROD DRIFT

Comment:

SAT _____ UNSAT _____

_*_ Performance step: (Denote critical steps with an asterisk)

Detects that multiple rods are withdrawing/drifting out of the core

Standard:

Applicant recognizes multiple rod drifts (critical).

Non-critical
Acknowledges annunciator 5006-4G ROD DRIFT
Applicant verifies control rod status on Full Core Display

Comment:

SAT _____ UNSAT _____

---

*__ Performance step: (Denote critical steps with an asterisk)

Performs Immediate Operator Actions of CPS No. 4007.02 INADVERTENT ROD MOVEMENT

- Attempts to stop rod movement
- Recognizes that more than one (1) rod drift light is energized or continuous rod withdrawal can not be stopped
- THEN Scrams the reactor.
  INSERTS a Manual Reactor Scram
  Verifies shutdown criteria is met

Standard:
Applicant INSERTS a Manual Reactor Scram and verifies all rods in.
Applicant may initiate ARI.

Comment:

SAT _____ UNSAT _____

Terminating cue:

The reactor is re-scrammed and all rods are verified in.

SAT _____ UNSAT _____

CLINTON POWER STATION

JPM Worksheet - B.1.a, Reset a Reactor Scram per CPS No. 4100.01 - Alt Path

VERIFICATION OF COMPLETION

Job Performance Measure No. _____

Examinee's Name:

Examiner's Name:

Date performed:

Facility Evaluator:

Number of attempts:

Time to complete:

Question Documentation:

Question:_____

_____

_____

Response:_____

_____

_____

_____

Result: SAT or UNSAT

Examiner's signature and date: _____ _____

INITIATING CUE:

A Reactor Scram has occurred.
Plant conditions are stable.
No fuel failure is indicated.
You are directed to reset the Reactor Scram per CPS 4100.01, Reactor Scram.

CLINTON POWER STATION

JPM Worksheet - B.1.b, Roll the Turbine Generator and Bring it to Rated Speed - Alt. Path

---

Facility: Clinton Power Station Task No: 011203C005

Task Title: Roll the Turbine Generator and Bring it to Rated Speed per CPS No. 3105.01 - Alternate Path

Job Performance Measure No. 011203J002 Modified

K/A Reference:

K/A SYSTEM NUMBER	K/A NUMBER	Importance Rating RO	Importance Rating SRO
245000	A3.02	2.8	2.8
	A2.09	2.5	2.8

Examinee: _____ NRC Examiner:

Facility Evaluator: _____ Date:

Method of testing:

Simulated Performance _____ Actual Performance ___X___

Classroom _____ Simulator ___X___ Plant _____

READ TO THE EXAMINEE

I will explain the initial conditions, which steps to simulate or discuss, and provide initiating cues. When you complete the task successfully, the objective for this job performance measure will be satisfied.

Initial Conditions:

A plant startup is in progress with the Turbine Generator ready to roll to rated speed.

Task Standard:

Main Turbine tripped based on high bearing vibrations > 8 mils with main Turbine speed ≤ 800 rpm.

Required Materials: None

CLINTON POWER STATION

JPM Worksheet - B.1.b, Roll the Turbine Generator
and Bring it to Rated Speed - Alt. Path

General References:

CPS No. 3004.01, TURBINE STARTUP AND GENERATOR SYNCHRONIZATION
CPS No. 3105.01, TURBINE

Initiating Cue:

A plant startup is in progress. The CRS directs you to roll the turbine generator and bring it to rated speed per CPS No. 3105.01.

All prerequisites for Turbine Roll are complete including those required by CPS No. 3105.01 step 8.1.6.~~a~~g. Additional information about the completed prerequisites:

- The main turbine has been on the Turning Gear Motor for a minimum of 4 hours.
- CV-4 testing has been accomplished.
- Hydraulic power unit for turbine control is in operation.

Currently at Step 8.2.6 in CPS No. 3004.01 and Step 8.1.6.f in CPS No. 3105.01.

You are to focus on those Main Control Room operator actions performed by the 'A' CRO.

Operators are available in the field at the Turbine Generator and on 781' Control Building.
If requested, provide Applicant with ~~copy of~~ a signed copy of CPS 3004.01

Time Critical Task: **NO**

Validation Time: 20 minutes OK

Simulator Set-up Conditions:

Initialize to a suitable IC for Turbine Roll (#21).
Set Vibration on MT Bearing #4 to 75%.
Select OFF on chest/shell warming.
Obtain CPS No. 3004.01 and Initial section 5.0 and Section 8 up to the step to roll the Turbine Generator.

Start Time: 11 25

PERFORMANCE INFORMATION

_____Performance step: (Denote critical steps with an asterisk)

Delete

8.1.6.a Verify prerequisite 5.10 for Turbine Roll complete.

5.10 **Turbine Roll** (Supports section 8.1.6)

a) Turbine shell and chest warming complete.
b) Ensure the main turbine is reset per section 8.1.3.
c) Main turbine on the turning gear.
d) Ensure the main turbine has been on the Turning Gear Motor (TGM), 1TG03K for a minimum of 4 hours if first-stage shell temperature is < 250°F.

   If first-stage shell temperature is ≥ 250°F, ensure the main turbine has been rolled on the TGM 10 minutes for each minute that it is stopped, or for 4 (four) hours, whichever is less.
e) Eccentricity within normal limits (~ 2 mils).
f) Condenser vacuum should be ≥ 26" Hg (< 4" Hg absolute).
g) Hydraulic power unit for turbine control is in operation per CPS No. 3105.02, HYDRAULIC POWER UNIT (EHC).
h) Verify/place Ext Stm Hdrs Drn To HP & LP Hdrs Cont control switch to AUTO.
i) Open/verify open 1B21-RSDV-2/1, MSR 1A/1B Drn Vlvs by momentarily placing control switch to STOP.
j) Observe average internal generator temperature (hot gas temperature) at least 20°C before operating the generator at > 1500 rpm.

Standard:

Stated as previously completed in initiating cue, but applicant may chose to reverify some or all of the items from prerequisite 5.10

Comment:

SAT _____ UNSAT _____

_____Performance step: (Denote critical steps with an asterisk)

8.1.6.b) Ensure all available/desired lift pumps running per 8.1.2

Delete

Standard:

All lift pumps are running and no low oil pressure amber lights on.
1TO11P, RED running lamp ON.
1TO12P, RED running lamp ON.
1TO14P, RED running lamp ON.
1TO15P, RED running lamp ON.
1TO13P, RED running lamp ON.
1TO16P, RED running lamp ON.

Comment:

SAT _____ UNSAT _____

_____Performance step: (Denote critical steps with an asterisk)

Delete

8.1.6.c) Place the Turbine Supervisory Instruments (TSI) main turbine vibration and eccentricity recorder (1UR-TS001) fast-slow chart print switch in "fast".

Cue:
Inform the applicant that the recorder will be placed in fast speed.

Standard:
N/A

Comment:

SAT _____ UNSAT _____

__*__ Performance step: (Denote critical steps with an asterisk)

8.1.6.d) START THE MOTOR SUCTION PUMP 1TO03P BY TAKING ITS CONTROL SWITCH TO "START" and verify the Main Shaft Oil Pump suction pressure is approximately 18 psig at the front standard..

Standard:
Applicant places the control switch to START for 1TO03P and verifies RED light ON.
Applicant directs field NLO to report the Main Shaft Oil Pump suction pressure is approximately 18 psig

Delete

Cue:
Upon request, report the oil pressure is 18 psig.
Applicant can verify pressure by checking Lube Oil pressure on MCR Control Board or sending NLO to the Front Standard.

Comment:

SAT _____ UNSAT _____

__*__ Performance step: (Denote critical steps with an asterisk)

8.1.6.e) ADJUST THE SETPOINT ON THE TURBINE OIL COOLING WATER CONTROLLER TO 110°F.

Delete

Standard:

Applicant adjust setpoint on the Turbine Oil Cooling Water Controller is set at 110 on MCR panel P870.

Comment:

SAT _____ UNSAT _____

_____ Performance step: (Denote critical steps with an asterisk)

8.1.6.f) (MCR) Verify annunciators clear:
- TROUBLE TSI CAB (5007-4B)
- TROUBLE TSI CAB (5007-4C)

Standard:

Applicant verifies annunciators clear on MCR panel P680
- TROUBLE TSI CAB (5007-4B)
- TROUBLE TSI CAB (5007-4C)

Comment:

SAT _____ UNSAT _____

---

critical

_*_ Performance step: (Denote critical steps with an asterisk)

8.1.6.g) ~~Select one of the following~~ STARTING RATEs:
"MEDIUM" ~~first-stage shell temperature < 350°F~~
~~"FAST" first-stage shell temperature > 350°F~~

~~Cue: Inform applicant that First Stage Shell Temperature is > 350°F~~

Standard:

Applicant depresses "~~Fast~~" Medium pushbutton on MCR panel P680 Main Turbine controls and verifies pushbutton light ON.

Comment:

SAT _____ UNSAT _____

_____ Performance step: (Denote critical steps with an asterisk)

8.1.7.a) IF the automatic feature fails,
THEN Use 1ES-EHS, Exh Hood Spray Init Vlv to maintain exhaust hood temperature between 140 - 200 F.

Standard:

Auto feature is working

NOTE: Exhaust hood temperatures should not require use of 1ES-EHS.

Comment:

SAT _____ UNSAT _____

_____ Performance step: (Denote critical steps with an asterisk)

8.1.7.b) **IF**: During the speed increase, a turbine condition is detected which is serious enough to require a speed reduction,
THEN: The speed reduction should be done by pushing CLOSE VALVES or tripping the turbine.

Standard:

If ~~vibration~~ turbine condition is serious enough, ~~candidate~~ applicant uses pushing CLOSE VALVES <u>or</u> trips turbine.

~~NOTE: Vibration may not be serious enough to require these actions at this time, but vibration level depends on time to accomplish steps.~~

Comment:

SAT _____ UNSAT _____

_____ Performance step: (Denote critical steps with an asterisk)

8.1.7.c) Check the following items as turbine speed increases:

- Vibration (Refer to Step 8.3.7)
- No detectable rubs
- Exhaust hood temperature
- Bearing oil flows and temperatures
- P870 turbine recorders 1UR-TS001/2

Standard:

Applicant monitors the following items from MCR as turbine speed increases:

- Vibration (Refer to Step 8.3.7)
- Exhaust hood temperature
- P870 turbine recorders 1UR-TS001/2

Applicant request information on the following from the field either from NLO or Group Leader:

- No detectable rubs
- Bearing oil flows and temperatures

NOTE: P870 turbine recorders 1UR-TS001/2 would normally be monitored by the 'B' CRO. The 'A' CRO does have indications of these parameters on DCS screen displays.

~~Comment:~~
CUE: When asked, inform Applicant there are no detectable ~~to~~ rubs and bearing oil flows and temperatures are normal. SAT _____ UNSAT _____

---

* Performance step: (Denote critical steps with an asterisk)

8.1.7.d) Select SPEED SET RPM at 100 and observes

- Main Stop Valves (MSVs) open.
- Intercept Valves (IVs) open slowly.
- No. 1 and 2 Control Valves (CVs) begin to open.
- Main Turbine rolls off the turning gear
- SPEED INCREASING light comes "ON".

Put all of step 8.1.7.d) on a single page.

Standard:

Applicant depresses the "100" SPEED SET RPM and verifies pushbutton light is ON. (critical)

Non-critical
Applicant observes the following:

- Main Stop Valves (MSVs) open - observes DCS display indication (Red indication)
- Intercept Valves (IVs) open slowly - observes DCS display indication. (Red indication)

Cue: If asked, Tell examinee that ~~IVs indicate open~~ OK. NOTE: IV position indications are a problem - they don't open until turbine is rolled and is > 1200 rpm, this has been documented on Simulator Problem Report ~~#??-????. Also, CVs may not show open at this low a speed~~. In ~~the~~ simulator

- No. 1 and 2 Control Valves (CVs) begin to open - observes DCS display indication.
- Main Turbine rolls off the turning gear - ~~observes DCS display indication~~ (B-CRO, window 5017, 7C
- SPEED INCREASING light comes "ON" - observes ~~DCS display~~ panel indication.

~~Applicant also observes:~~

- Annunciators Div 1 or 4 (window 5004, 1D) and Div 2 or 3 (window 5005, 1D) TSV CV TRIP clear.

Comment:

SAT _____ UNSAT _____

_____ Performance step: (Denote critical steps with an asterisk)

8.1.7.e) After the turbine rolls off the turning gear, Place the Turning Gear Motor, 1TG03K control switch in AUTO/AFTER STOP to enable the auto start feature.

Standard:

Applicant verifies Turning Gear disengages as seen on DCS or disengaged green light ON indicated on MCR panel P870.

NOTE: Placing the Turning Gear Motor, 1TG03K control switch in AUTO/AFTER STOP would ~~normally~~ be done by the 'B' CRO.

Cue: Inform applicant that ~~someone else will~~ the B-CRO performed this action. ~~concentrate on P680 controls and indications~~

Comment:

SAT _____ UNSAT _____

__*__ Performance step: (Denote critical steps with an asterisk)

8.1.7.f) WHEN THE "AT SET SPEED" LIGHT comes "ON", select SPEED SET RPM at 800 and observe the SPEED INCREASING light comes "ON".

Standard:

When "AT SET SPEED" light comes ON Applicant depresses "800" SPEED SET RPM Pushbutton and verifies pushbutton light ON. (Verifying light ON is not critical)

Comment:

SAT _____ UNSAT _____

_____ Performance step: (Denote critical steps with an asterisk)
(Local Operator Action, B-Area operator)

8.1.7.g) When turbine speed is greater than 100 rpm,
Reset the auxiliary speed signal lights on the system monitor panel by depressing both ELECTRICAL MALFUNCTION RESET push-buttons simultaneously on the System Monitoring panel

Standard:

Direct B-Area Operator on Control Building 781' to reset the auxiliary speed signal lights on the system monitor panel by depressing both ELECTRICAL MALFUNCTION RESET push-buttons simultaneously on the System Monitoring panel.

Cue:

Panel not available in the Simulator, if asked tell ~~candidate~~ Applicant that the action is completed

~~Comment~~:

Note to Examiner: Electrical Malfunction System Fault light ~~does~~ remains illuminated when local operator depresses the Electrical Malfunction Reset push-button.

SAT _____ UNSAT _____

_____ Performance step: (Denote critical steps with an asterisk)

High Vibration Turbine Shaft (Pre Trip) occurs ~~at some point~~ during the roll up ~~to/of~~ prior to ~~at~~ 800 rpm. References CPS 5007.04 window 4-D.

Standard:

Applicant ~~observes~~ reports main turbine vibrations trending up, ~~by DCS indications and determines the need to go to~~ Applicant refers to CPS No. 3105.01, Turbine High Vibration levels, section 8.3.7.
If annunciator 5007-4D is received, applicant refers to CPS No. 5007.04 for window 4-D

~~Step is satisfied if Candidate recognizes adverse vibration trend and refers to CPS No. 3105.01 ABNORMAL PERFORMANCE, section 8.3.7, "Turbine High Vibration levels".~~

NOTE:

Auto trip occurs at 10 mils (3.3 second time delay). Vibrations should not exceed 9 mils based on setup conditions

Comment:

SAT _____ UNSAT _____

---

*___ Performance step: (Denote critical steps with an asterisk)

CPS 3105.01 ABNORMAL PERFORMANCE, section 8.3.7, "Turbine High Vibration levels".
~~Responds to~~ vibrations per table for < 800 rpm. ~~In either case Immediately trips the turbine.~~ Trip turbine if vibrations are ≥ 8 mils.

Standard:

Applicant simultaneously depresses both Turbine Trip Pushbuttons (critical) when vibrations ≥ 8 mils. Applicant may trip turbine prior to 8 mils.
Verifies the Main Turbine is tripped;
indent → ~~Observes~~ all turbine valves closed ~~and speed is lowering~~ on DCS display (Green Light)

~~Comment~~:
- Turbine speed lowering
- Trip valve indicating lights are backlit green and "Tripped" is ~~the~~ illuminated.

SAT _____ UNSAT _____

Terminating cue:

The Turbine Generator is tripped.

SAT _____ UNSAT _____

CLINTON POWER STATION

JPM Worksheet - B.1.b, Roll the Turbine Generator
and Bring it to Rated Speed - Alt. Path

VERIFICATION OF COMPLETION

Job Performance Measure No. _____

Examinee's Name:

Examiner's Name:

Date performed:

Facility Evaluator:

Number of attempts:

Time to complete:

Question Documentation:

Question:_____
_____
_____
_____

Response:_____
_____
_____
_____
_____

Result: SAT or UNSAT

Examiner's signature and date: _____ _____

CLINTON POWER STATION

JPM Worksheet - B.1.b

INITIATING CUE:

A plant startup is in progress.

The CRS directs you to roll the turbine generator and bring it to rated speed per CPS No. 3105.01.

All prerequisites for Turbine Roll are complete including those required by CPS No. 3105.01 step 8.1.6.~~a~~e. Additional information about the completed prerequisites:

- The main turbine has been on the Turning Gear Motor for a minimum of 4 hours.
- CV-4 testing has been accomplished.
- Hydraulic power unit for turbine control is in operation.

Currently at Step 8.2.6 in CPS No. 3004.01 and Step 8.1.6~~a~~f in CPS No. 3105.01.

You are to focus on those Main Control Room operator actions performed by the 'A' CRO.

Operators are available in the field at the Turbine Generator and on 781' Control Building.

CLINTON POWER STATION
JPM Worksheet - B.1.c,
Emergency Shutdown and Isolation of One Reactor Recirculation
Loop from Fast Speed per CPS No. 3302.01

Facility: Clinton Power Station Task No:014202J001

Task Title: Emergency Shutdown And Isolation of One Reactor Recirculation Loop From Fast Speed per CPS No. 3302.01

Job Performance Measure No:014202J001

K/A Reference:

202001	A4.01	3.7	3.7
	A4.02	3.5	3.5
	A4.05	3.3	3.3

Examinee: _____ NRC Examiner:

Facility Evaluator: _____ Date:

Method of testing:

Simulated Performance _____ Actual Performance ___X___

Classroom _____ Simulator ___X___ Plant _____

READ TO THE EXAMINEE

I will explain the initial conditions, which steps to simulate or discuss, and provide initiating cues. When you complete the task successfully, the objective for this job performance measure will be satisfied.

Initial Conditions:

The plant is operating at 100 % power step, 71 on the 104% rod line.

Task Standard:

Reactor Recirculation Pump B shutdown and the "B" Loop of RR System isolated

CLINTON POWER STATION
JPM Worksheet - B.1.c,
Emergency Shutdown and Isolation of One Reactor Recirculation
Loop from Fast Speed per CPS No. 3302.01

Required Materials: None

General References:

CPS No. 3302.01, REACTOR RECIRCULATION

Initiating Cue:

The plant is operating at 100 % power step, 71 on the 104% rod line. The Reactor Recirc. Pump "B" outer seal has failed and the inner seal is ~~failing.~~ degrading The CRS has directed you to perform an Emergency Shutdown and isolation of the "B" Reactor Recirculation Loop. ~~UP TO THE STEP~~ STOP PRIOR TO ISOLATING CRD SEAL INJECTION FLOW.

Time Critical Task: YES/**NO**

Validation Time: 15 minutes

Simulator Set-up Conditions:

1. Initialize to any suitable IC (IC-1 is recommended) with RR Pumps in fast speed and rod line such that trip does not cause entry into restricted zone.
2. Load Remote LC103 to shut 1C11-F026B using a remote or manual trigger.
3. Insert RR06C, RR Pump "B" Seal B1 Failure, 100%.
4. Insert RR06D, RR Pump "B" Seal B2 Failure, 100% with 5 minute ramp, then take the simulator out of FREEZE.
5. Start one mixing compressor and maintain DW pressure between 0.3 and 1.0 psig.
6. Freeze the simulator when Drywell pressure is approximately 0.6 psig.

Start Time_____

PERFORMANCE INFORMATION

_____ Performance step: (Denote critical steps with an asterisk)

8.2.3 RR Loop - Emergency Shutdown / RR Pump Trip

> **CAUTION**
>
> Core flow near the RESTRICTED ZONE increases the potential for thermal hydraulic instabilities. If instability is observed or the restricted zone is entered, an immediate SCRAM is required.
>
> Do not operate with partial FW heating (4005.01) when only one RR pump is operating (Rapid Plant Shutdown required).
>
> Single Loop Operating limits are controlled per the appropriate 300x.01 integrated operating procedure.

___*___ Performance step: (Denote critical steps with an asterisk)

8.2.3.1 Trip RR Pump A(B), ensuring pump amps and speed show a complete pump trip:
from fast speed by opening Bkr 3A(3B), 4A(4B) or 5A(5B),
~~or from slow speed by opening Bkr 1A(1B) or 2A(2B).~~

Standard: The operator depresses the pushbuttons for the 3B, 4B, or 5B breaker to the open position. Breaker indication is green for motor breaker used. Pump amps on CRT and speed indication on P678 are zero.

NOTE: Operator may lower reactor water level prior to tripping the pump.

Comment:

SAT_____UNSAT_____

___*___ Performance step: (Denote critical steps with an asterisk)

8.2.3.2 Shut 1B33-F067A(B), Discharge Vlv.

Standard: The close pushbutton for 1B33-F067B is depressed, and when the valve is shut, observes its red light is "OUT" and the green light is "ON" (indicates shut).

Note: It will take two minutes to fully close this valve.
Annunciator "RECIRC MTR B LS AUTO XFER CKT NA" will alarm when 1B33-F067B closes.

Comment:

SAT_____UNSAT_____

_____ Performance step: (Denote critical steps with an asterisk)

8.2.3.3 Enter CPS No. 4008.01, ABNORMAL REACTOR COOLANT FLOW.

Standard: Verifies Immediate Operator Actions. Informs CRS that plant is in the 'EXIT' region of the P/F Map.

What are they? (VERIFICATION S ONLY ALREADY DONE)

Comment:

SAT_____UNSAT_____

__*__ Performance step: (Denote critical steps with an asterisk)

8.2.4 Idle RR Loop - Isolating

> CAUTION
>
> With the RR pump shutdown and injection flow stopped, seal cavity will reach 185°F in ~ 30 to 60 minutes. Seal damage may occur at > 250°F and the time necessary to reach 250°F will be dependent upon the seal leakage rate and initial cavity temperature.
>
> Securing CRD injection to a RR pump which has been secured and isolated due to a seal leak will cause an increase in DW airborne activity as the loop depressurizes to atmosphere through the seal.

8.2.4.1 Shut 1G33-F100(F106), Recirc Loop A(B) Suct. [RT valves]

Standard: The operator depresses the CLOSE pushbutton for 1G33-F106, the valve should indicates shut, green light "ON", red light "OFF".

Comment:

SAT_____UNSAT_____

_____ Performance step: (Denote critical steps with an asterisk)

8.2.4.2 Shut 1B33-F067A(B), Discharge Vlv.

Standard: Previously Shut.

Comment:

SAT_____UNSAT_____

___*___ Performance step: (Denote critical steps with an asterisk)

8.2.4.3 Shut 1B33-F075A(B), Pmp A(B) Seal Stag Shutoff Vlv.

Standard: The operator takes the 1B33-F075B switch to the CLOSE position.

Comment:

SAT_____UNSAT_____

___*___ Performance step: (Denote critical steps with an asterisk)

8.2.4.4 IF Loop suction isolation is required to prevent further system degradation or system challenges
THEN Shut 1B33-F023A(B), Pmp Suction Vlv.

Standard: The operator depresses the CLOSE pushbutton for 1B33-F023B, and the valve should indicate shut, green light "ON", and red light "OFF".

NOTE:
1. Per the initiating cue on seal status.
2. It will take two minutes to fully close this valve.
3. The annunciator "RECIRC MTR B LS AUTO XFER CKT NA" will alarm when 1B33-F023B closes.

Comment:

SAT_____UNSAT_____

_____ Performance step: (Denote critical steps with an asterisk)

8.2.4.5 Notify Chemistry that the RR loop will be isolated.
Coordinate with Chemistry to establish normal water chemistry limits for power operation before fully isolating the loop due to possible high conductivity intrusion (i.e., isolating the idle loop prior to power accession).

Standard: The operator reminds the CRS to contact Chemistry concerning chemistry limits

NOTE: As the CRS, acknowledge the reminder.

Comment:

SAT_____UNSAT_____

_____ Performance step: (Denote critical steps with an asterisk)

8.2.4.6 <u>When</u> Idle RR loop has cooled down to < 250°F,
<u>or</u>
In the event the RR seals are failed, idle RR loop has depressurized to ~ Drywell pressure.

<u>Then</u> If RR Aux Seal Inj Pump is not running, then shut 1C11-F026A(B), CRD Supp Isol To RR Pump a(B)

Standard: Allows loop depressurization via blown recirc. pump seals.

Cue: Time has been compressed and that the loop has been depressurized to approximately drywell pressure.

Comment: NO OTHER STEPS ARE CRITICAL SINCE 8.2.4.4. WE SHOULD STOP THE TEST

SAT_____UNSAT_____

_____ Performance step: (Denote critical steps with an asterisk)

8.2.4.6 b) Shut 1C11-F026A(B), CRD Supp Isol To RR Pump A(B).
Failure to shut F026 when the RR seals are intact can result in the loop being pressurized to 1250 psig.

Standard: Operator directs "C" Area Operator to shut 1C11-F026B when loop is approx. the same as drywell pressure.

NOTE: Activate Remote LC103 and then, cue the operator that 1C11-F026B is shut. Cue that RP has verified containment is accessible.

Comment:

SAT_____UNSAT_____

_____ Performance step: (Denote critical steps with an asterisk)

8.2.4.6 c) When proper RR loop chemistry limits established, Shut 1B33-F023A(B), Pmp Suction Vlv.

Standard: Not applicable to this task.

Comment:

SAT_____UNSAT_____

_____ Performance step: (Denote critical steps with an asterisk)

8.2.4.9 If the loop is to remain isolated in MODEs 1, 2 or 3, record the date & time of isolation in the MCR Journal & notify NSED - ECCS & Reactivity Systems Team.

Standard: The operator logs the date and time of the isolation in the MCR Journal. Notifies NSED - ECCS & Reactivity Systems Team. (Candidate verbalizes that he will log ~~this~~ these data).

NOTE: If asked about the notifications, as the CRS state that the notifications have been made. If asked about taking a SCRAM or Plant Shutdown, as the CRS state that the CPS Management has been notified and the decision is forthcoming.

Comment:

SAT_____UNSAT_____

Terminating cue:

Reactor Recirculation Pump B is shutdown with the loop isolated.

VERIFICATION OF COMPLETION

Job Performance Measure No. _____

Examinee's Name:

Examiner's Name:

Date performed:

Facility Evaluator:

Number of attempts:

Time to complete:

Question Documentation:

Question:_____
_____
_____

Response:_____
_____
_____
_____

Result: SAT or UNSAT

Examiner's signature and date: _____ _____

INITIATING CUE

The plant was operating at 100 % power step, 71 on the 104% rod line. The Reactor Recirc. Pump "B" outer seal has failed and the inner seal is failing. The CRS has directed you to perform an Emergency Shutdown and isolation of the "B" Reactor Recirculation Loop. STOP PRIOR TO ISOLATING CRD INJECTION FLOW.

CLINTON POWER STATION

JPM Worksheet B.1.d, Perform Emergency Containment Vent and Purge to Control Containment Hydrogen Levels per CPS No. 4411.06 - Alt Path

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Facility: Clinton Power Station Task No: 015200C627

Task Title: Perform Emergency Containment Vent and Purge to Control Containment Hydrogen Levels per CPS No. 4411.06

Job Performance Measure No: 015200J040

K/A Reference:

K/A SYSTEM NUMBER	K/A NUMBER	IMPORTANCE RATING RO	SRO
223001	A 2.04	3.7	3.8
	A 2.06	4.1*	4.1*

Examinee: _____ NRC Examiner: _____

Facility Evaluator: _____ Date: _____

Method of testing:

Simulated Performance _____ Actual Performance ___x___

Classroom _____ Simulator ___x___ Plant _____

READ TO THE EXAMINEE

I will explain the initial conditions, which steps to simulate or discuss, and provide initiating cues. When you complete the task successfully, the objective for this job performance measure will be satisfied.

Initial Conditions:

CLINTON POWER STATION

JPM Worksheet B.1.d, Perform Emergency Containment Vent and Purge to Control Containment Hydrogen Levels per CPS No. 4411.06 - Alt Path

Task Standard:

Containment Hydrogen Purge is initiated in accordance with CPS No. 4411.06, EMERGENCY CONTAINMENT VENTING, PURGING, AND VACUUM RELIEF. Completion of the task require use of a Standby Gas Treatment Train other than the one initially prescribed.

Required Materials: None

General References:

CPS No. 4411.06, EMERGENCY CONTAINMENT VENTING, PURGING, AND VACUUM RELIEF

Initiating Cue:

Primary Containment hydrogen concentration is 1%. You are directed to vent and purge the Primary Containment using CPS No. 4411.06, EMERGENCY CONTAINMENT VENTING, PURGING, AND VACUUM RELIEF, Section 2.8, Containment Hydrogen Purge. No other sections of CPS No. 4411.06 have been performed.

Use VG Train 'A'

Time Critical Task: YES/**NO**

Validation Time: 15 Minutes START 9:46 10:00 ok ✓

CLINTON POWER STATION

JPM Worksheet B.1.d, Perform Emergency Containment Vent and Purge to Control Containment Hydrogen Levels per CPS No. 4411.06 - Alt Path

Simulator Set-up Conditions:

1. Instructor Override Switch for damper 1VG01YA to NORMAL
2. Initialize to any IC that will allow operation of the Standby Gas Treatment System. (~~Suggest~~ IC-21)
3. Start both Igniters
4. Start both Hydrogen Mixing Compressors.
5. Verify that Containment pressure is less than 2.6 psig.
6. Remove tags from valves 1VR002A, 1VR002B, 1VQ006A, and 1VQ006B.

ADD REAL SETUP

START TIME:_____

PERFORMANCE INFORMATION

_____ Performance step: (Denote critical steps with an asterick) -?

2.8.1 Verify CNMT pressure < 2.6 psid by HI CNMT PRESS white indicating light (above 1VG01YA/B switch) being OFF.

Standard:

HI CNMT PRESS white light OFF

NOTE:
1. Examinee should also verify that Containment and Drywell temperatures are less than 212°F per the CAUTION at beginning of section.
2. Hydrogen concentration is 1% as stated in Initiating Cue.

Comment:

SAT_____UNSAT_____

_____ Performance step: (Denote critical steps with an asterick)

.8.2 **IF** Section 2.2, Vent Using Hydrogen Purge Supply Path was performed,

NOTE
Relays in CPS No. 4410.00C010 EOP supply bag.

THEN At 1H13-P861, Bay C, reinstall relay 1UAY-VQ503H (JP). (Left wall relay column, bottom relay)

and

At 1H13-P851, Bay C, reinstall relay 1UAY-VQ505J (KS). (Third row from top, second relay from left)

Standard: Recall from initiating cue that section 2.2 was not performed.

Comment:

SAT_____UNSAT_____

__*__ Performance step: (Denote critical steps with an asterick)

2.8.3 Place control switches for both 1VG02YA & B, SGTS Trn A(B) Fuel Bldg Isol Dmprs to the CLOSE position.

Standard: Key lock switches placed/verified in CLOSE position and Green Lights ON.

NOTE: 1VG02YA(B) will indicate shut with control switch in AUTO, switch must be taken to CLOSE to satisfy conditions for the Flowpath
Annunciators NOT AVAILABLE VG SYS Div 1 and 2 activate

Comment:

SAT_____UNSAT_____

_____ Performance step: (Denote critical steps with an asterick)

2.8.4 Verify following dampers shut:

a) 1VG02YA & B, SGTS Trn A(B) Fuel Bldg Isol Dmprs.
b) 1VG04YA & B, SGTS Trn A(B) Pmp Rms Suct Dmprs.
c) 1VG05YA & B, SGTS Trn A(B) Fuel Bldg Suct Dmprs.
d) 1VG06YA & B, SGTS Trn A(B) ECCS Rms Suct Dmprs.

Standard: Green lights ON for 1VG02YA & B, 1VG04YA & B, 1VG05YA & B, and 1VG06YA & B.

Comment:

SAT_____UNSAT_____

___*___ Performance step: (Denote critical steps with an asterick)

2.8.5 Open both 1VQ006A and B, CNMT Bldg Exh Outbd (Inbd) Isol Byp Vlvs.

Standard: Keylock switches placed in open and Red lights ON for 1VQ006A and 1VQ006B

Comment:

SAT_____UNSAT_____

___*___ Performance step: (Denote critical steps with an asterick)

2.8.6 Start SGTS Trn A Exh Fan, 0VG02CA.

Standard: OVG02CA will not have a flowpath until the next step is performed.

NOTE: Eventually get Annunciator Low Flow Alarm "SGTS A"

Comment:

SAT_____UNSAT_____

___*___ Performance step: (Denote critical steps with an asterick)

2.8.7 Place 1VG01YA, SGTS Trn A DW Prg Isol Dmpr control switch PURGE.

Standard: Keylock switch to Purge, GREEN light stays ON for 1VG01YA
Recognizes Isolation damper did not open
Reports to CRS that 'A' train SGTS cannot be used.

NOTE: CRS directs RO to use SGTS 'B" Train

Comment:

SAT_____UNSAT_____

_____ Performance step: (Denote critical steps with an asterick)

Closes 1VG01YA and STOPS SGTS 'A' fan

Standard: Closes 1VG01YA and STOPS SGTS 'A' fan

NOTE: Proceeds to Start SGTS 'B'

Comment:

SAT_____UNSAT_____

___*___ Performance step: (Denote critical steps with an asterick)

2.8.6 Start SGTS Trn B Exh Fan, 0VG02CB.

Standard: OVG02CB will not have a flowpath until the next step is performed.

Comment: Eventually get Annunciator Low Flow Alarm "SGTS B"

Comment:

SAT_____UNSAT_____

___*___ Performance step: (Denote critical steps with an asterick)

2.8.7 Place 1VG01YB, SGTS Trn B DW Prg Isol Dmpr control switch to PURGE.

Standard: Keylock switch to PURGE, Red light ON for 1VG01YB

Comment:

SAT_____UNSAT_____

_____ Performance step: (Denote critical steps with an asterick)

2.8.8 Start both hydrogen mixing units per CPS No. 3316.01, CONTAINMENT COMBUSTIBLE GAS CONTROL (HG).

Standard: Verifies that both mixers are operating

Comment:

SAT_____UNSAT_____

___*___ Performance step: (Denote critical steps with an asterick)

2.8.9 **WHEN** CNMT pressure is ~ 0 psig,

THEN Open both 1VR002A and B, CNMT Bldg Sply Outbd Inbd) Isol Byp Vlvs.

Standard: Checks on Cnmt Pressure
Keylock switch to open, Red lights ON for 1VR002A and 1VR002B

NOTE: If containment pressure is > 0 psig then inform the examinee that pressure is approximately 0 psig.

Comment:

SAT_____UNSAT_____

Terminating cue:

Containment Hydrogen Purge has been initiated with SGTS train 'B'..

CLINTON POWER STATION

JPM Worksheet B.1.d, Perform Emergency Containment Vent and Purge to Control Containment Hydrogen Levels per CPS No. 4411.06 - Alt Path

VERIFICATION OF COMPLETION

Job Performance Measure No. _____

Examinee's Name:

Examiner's Name:

Date performed:

Facility Evaluator:

Number of attempts:

Time to complete:

Question Documentation:

Question:_____

_____

_____

Response:_____

_____

_____

_____

Result: SAT or UNSAT

Examiner's signature and date: _____ _____

INITIAL CONDITION

JPM Worksheet B.1.d

INITIATING CUE:

An emergency condition exists. Primary Containment hydrogen concentration is 1%. You are directed to vent and purge the Primary Containment using CPS No. 4411.06, EMERGENCY CONTAINMENT VENTING, PURGING, AND VACUUM RELIEF, Section 2.8, Containment Hydrogen Purge. No other sections of CPS No. 4411.06 have been performed.

Use VG Train 'A'

CLINTON POWER STATION

JPM Worksheet - B.1.e, Manually Perform a Group 1 Isolation - Alt Path

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Facility: Clinton Power Station Task No:014200C679

Task Title: Manually Perform a Group 1 Isolation per CPS No. 4001.02 - Alt. Path

Job Performance Measure No:014200J008 Modified

K/A Reference:

K/A SYSTEM NUMBER	K/A NUMBER	Importance Rating RO	SRO
223002	A 4.02	3.9	3.8

Examinee: _____ NRC Examiner:

Facility Evaluator: _____ Date:

Method of testing:

Simulated Performance _____ Actual Performance ___X___

Classroom _____ Simulator ___X___ Plant _____

READ TO THE EXAMINEE:

I will explain the initial conditions, which steps to simulate or discuss, and provide initiating cues. When you complete the task successfully, the objective for this job performance measure will be satisfied.

Initial Conditions:

Plant shutdown with the Main Steam system in operation with the MSIV's open.

Task Standard:

Manually isolates Group 1 per 4001.02 and isolates 'B' MSL using F098B

Required Materials: Panel key-lock switch keys

CLINTON POWER STATION

JPM Worksheet - B.1.e, Manually Perform a Group 1 Isolation - Alt Path

General References:

CPS No. 4001.02, AUTOMATIC ISOLATION
CPS No. 4001.02C001, AUTOMATIC ISOLATION CHECKLIST

Initiating Cue:

An emergency condition exists. A Group 1 isolation is required but failed to occur automatically. Manually perform **ONLY** a Group 1 isolation.

Time Critical Task: NO ~~**YES**~~ ~~Time for completion 15 minutes~~

Validation Time: 5 minutes

Simulator Set-up Conditions:

Any IC with the Main Steam system in operation with the ALL GPI ISOLATION VALVES ~~MSIV's~~ open.
MS08B: B21F022B to 100% (Open)
MS08F: B21F028B to 50% CONDITIONAL: when Handswitch taken to CLOSE
OVERRIDE THE CRVIC BUTTONS.

START TIME 9^35

PERFORMANCE INFORMATION

_*__ Performance step: (Denote critical steps with an asterisk)

4001.02C001, Group #1 Main Steam Lines and Drains:

MANUALLY CLOSES THE FOLLOWING VALVES USING THEIR RESPECTIVE CONTROL SWITCHES:

a) 1B21-F022B
b) 1B21-F028B
c) 1B21-F022D
d) 1B21-F028D
e) 1B21-F022A
f) 1B21-F028A
g) 1B21-F022C
h) 1B21-F028C
I) 1B21-F067B
j) 1B21-F067D
k) 1B21-F067A
l) 1B21-F067C
m) 1B21-F016
n) 1B21-F019

OK

No Keys

Standard:

Applicant places keys in key-lock switches and turns switch from Auto to close for ~~initiates closing~~ ~~closes~~ the following valves:

a) 1B21-F022B
b) 1B21-F028B
c) 1B21-F022D, verifies only GREEN light ON
d) 1B21-F028D, verifies only GREEN light ON
e) 1B21-F022A, verifies only GREEN light ON
f) 1B21-F028A, verifies only GREEN light ON
g) 1B21-F022C, verifies only GREEN light ON
h) 1B21-F028C, verifies only GREEN light ON

Applicant CLOSES ~~or VERIFIES CLOSED~~ the following Motor Operated Valves

I) 1B21-F067B, verifies only GREEN light ON
j) 1B21-F067D, verifies only GREEN light ON
k) 1B21-F067A, verifies only GREEN light ON
l) 1B21-F067C, verifies only GREEN light ON
m) 1B21-F016, verifies only GREEN light ON
n) 1B21-F019, verifies only GREEN light ON

 SAT ___ UNSAT ___

(Non-critical)

CLINTON POWER STATION

JPM Worksheet - B.1.e, Manually Perform a Group 1 Isolation - Alt Path

Performance step

Applicant ~~recognizes~~ reports the following valves failed to close:

a) 1B21-F022B, recognizes RED light is ON
b) 1B21-F028B, recognizes RED and GREEN lights ON

CUE (3) IF APPLICANT ATTEMPTS TO USE CRVIS PUSH BUTTONS THEN SRO SHOULD STOP APPLICANT FROM USING PUSH BUTTONS AND INFORM APPLICANT IT WILL COMPLICATE PLANT CONDITIONS

~~Note: 1B21F067A, B, C and D may already be closed~~

~~Comment:~~

STANDARD: Applicant reports the valves failed to close

SAT_____ UNSAT_____

CUE (1) If Applicant requests directions from SRO, direct the Applicant to manually isolate the "B" Main Steam line.

(2) If Applicant recommends using CRVICS Manual Initiation, Inform Applicant Not to use Push buttons. It will complicate plant conditions.

X Performance step: (Denote critical steps with an asterisk)

Closes motor operated isolation F098B → ~~How is this driven by procedure (?) Tool Box Skill~~ Rd/SRO

Standard: Applicant places key in Key-lock switch and turns switch from Open to Close,

Green light ON for F098B

~~OR~~

~~Attempt GROUP 1 isolation by Arming & Depressing CRVICS MANUAL INITIATION push-button(s):~~

- ~~LOGIC A & D push-buttons (Outboard valves)~~
- ~~LOGIC B & C push-buttons (Inboard valves)~~

~~THEN, After recognizing that 'B' Main Steam Line is still not isolated follows up by Closing the F098B and gets Green ON light~~

~~Note: May Inform CRS that 'B' Main Steam Line failed to isolate.~~

~~Cue: Manually isolate the un-isolated steam line~~

Note: Valve 1B21-F098B is a slow closing MOV. (~ 1-2 min.)

Comment:

SAT_____ UNSAT_____

_____ Performance step: (Denote critical steps with an asterisk)

Reports to CRS that 'B' Main Steam Line is isolated

Standard:

Main Steam is isolated

Comment:

SAT_____ UNSAT_____

Terminating cue:

Valve 1B21-F098B is CLOSED and Main Steam is Isolated.

STOP TIME _____

CLINTON POWER STATION

JPM Worksheet - B.1.e, Manually Perform a Group 1 Isolation - Alt Path

VERIFICATION OF COMPLETION

Job Performance Measure No. _____

Examinee's Name:

Examiner's Name:

Date performed:

Facility Evaluator:

Number of attempts:

Time to complete:

Question Documentation:

Question:_____
_____
_____

Response:_____
_____
_____
_____

Result: SAT or UNSAT

Examiner's signature and date: _____ _____

INITIAL CONDITIONS

INITIATING CUE:

An emergency condition exists. A Group 1 isolation is required but failed to occur automatically. Manually perform **ONLY** a Group 1 isolation.

CLINTON POWER STATION

JPM Worksheet - B.1.f, Inject to the RPV Using SX Through LPCI

Facility: Clinton Power Station Task No:014205C522

Task Title: Inject to the RPV using SX Through LPCI

Job Performance Measure No:014205J001

K/A SYSTEM NUMBER	K/A NUMBER	Importance Rating RO	Importance Rating SRO
203000 - Reactor Low Water Level	A4.02	4.1	4.1

Examinee: _____ NRC Examiner:

Facility Evaluator: _____ Date:

Method of testing:

Simulated Performance _____ Actual Performance ____x____

Classroom _____ Simulator _____x_____ Plant _____

READ TO THE EXAMINEE

I will explain the initial conditions, which steps to simulate or discuss, and provide initiating cues. When you complete the task successfully, the objective for this job performance measure will be satisfied.

Initial Conditions:

The plant is shutdown following ~~an accident~~ a LOCA. ~~Currently no inject source is available to makeup to the RPV.~~ All ECCS is injecting, except RHR-B, due to pump failure.

Task Standard:

Inject Shutdown Service Water into the Reactor Vessel.

Required Materials: Panel key-lock switch key

CLINTON POWER STATION

JPM Worksheet - B.1.f, Inject to the RPV Using SX Through LPCI

General References:

CPS No. 4411.03, EOP INJECTION/FLOODING SOURCES, Appendix A, 2.0

Initiating Cue:

Inject to the Reactor Pressure Vessel using Shutdown Service Water through RHR 'B' per CPS No. 4411.03, ~~Method 2.~~ Appendix A, step 2.a, ~~LP~~ LPCI has been injecting for greater than 10 minutes.

Time Critical Task: **NO** (15 minutes)

Validation Time: 13 minutes ok

Simulator Set-up Conditions:

Shutdown IC with the Reactor de-pressurized.(Suggest IC-13).
Start Shutdown Service Water Pumps 'A', 'B', and 'C'.

- START TIME: 10 14

PERFORMANCE INFORMATION

__*__ Performance step: (Denote critical steps with an asterisk)

2.1 Shut 1E12-F003B, RHR B Hx Outlet Valve. ~~(Hold to Close)~~ (Hold to close Valve)

Standard: Green light ON for 1E12-F003B.

Comment: (Throttle valve, ≈ 1½ minutes to close.)

SAT_____UNSAT_____

__*__ Performance step: (Denote critical steps with an asterisk)

2.2 Shut 1E12-F048B, RHR B Hx Bypass Valve. ~~(Hold to Close)~~ (Hold to close Valve)

> NOTE
>
> 1E12-F048B response to ECCS logic signals:
>
> ° LPCI: OPEN for 10 minutes, then can reposition.
> ° CNMT Spray: CLOSE, reset needed to reposition.
> ° LPCI & CNMT Spray: Cycles OPEN/CLOSE until 10 min. LPCI timer times out.

Standard:

Applicant turns switch to CLOSE 1E12-F048B, and verifies Green light ON.

Note: This is a throttle valve and takes several minutes to close.
~~No LPCI, CNMT Spray signals are present~~

Comment:

SAT_____UNSAT_____

_____ Performance step: (Denote critical steps with an asterisk)

2.3 Verify SX running per CPS No. 3211.01, SHUTDOWN SERVICE WATER (SX).

~~As necessary to support core cooling, Div 1 SX may be cross-connected with Div 2 SX by opening 1SX011A & B, Div 1(2) Cross Tie Valves.~~

~~As time permits, isolate non-essential SX loads.~~

- SX "1B" pump Red Light is on.
- SX discharge pressure ≈ 150-175 psig.
- PSW to SX isolation valve, SX014B, closed. GREEN Light ON.
- SX Pump Room "B" Supply Fan Running, Red Light is on.
- SX Pump Minimum Flow DG 1B HX Outlet Valve SX 631B, open.

Standard:

Applicant verifies that Division II SX pump is running.

Cue: (1) If asked Inform applicant ~~that he is~~ to defer isolating non-essential SX loads.

(2) If asked, inform Applicant there is no need to cross-connect Div 1 and Div 2 SX.

~~Comment:~~

Note to Examiner: (1) Applicant ~~may~~ not required to refer to SX Procedure 3211.01 to verify SX running.

(2) SX pressure ~~maybe~~ may be slightly > 180 psig.

SAT_____UNSAT_____

_____ Performance step: (Denote critical steps with an asterisk)

2.4 ~~SHUT~~ Verify Shut

a) 1E12-F024B, RHR B Test Valve To Suppr Pool.
b) 1E12-F014B, SSW Inlet RHR B Hx Valve.
c) 1E12-F053B, RHR B To Feedwater S/D Cooling Rtrn Vlv.
d) 1E12-F023, RHR B Supp To Rx Head Spray Valve.
e) 1E12-F028B, RHR B To CNMT Spray B Shutoff Vlv.

~~f) 1E12-~~

Standard:

Applicant verifies Green lights ON for:

a) 1E12-F024B, RHR B Test Valve To Suppr Pool.
b) 1E12-F014B, SSW Inlet RHR B Hx Valve.
c) 1E12-F053B, RHR B To Feedwater S/D Cooling Rtrn Vlv.
d) 1E12-F023, RHR B Supp To Rx Head Spray Valve.
e) 1E12-F028B, RHR B To CNMT Spray B Shutoff Vlv.

~~Note: Valves may already be shut~~

Comment:

SAT_____UNSAT_____

____ Performance step: (Denote critical steps with an asterisk)

2.5 ~~Open~~ Verify open/1E12-F027B, RHR B To CNMT Outbd Isol Valve.

Standard:
Applicant ~~OPENs~~ verifies 1E12-F027B is open, verifies Red light ON.

~~Note: Valve may already be open~~

Comment:

SAT_____UNSAT_____

__*__ Performance step: (Denote critical steps with an asterisk)

2.6 Open 1E12-F096, Service Water To RHR Blocked Supp Vlv. (Key operated switch)

Standard:
Applicant inserts key into key-lock and turns switch to OPEN 1E12-F096, verifies Red light ON.

Comment: (Long stroke time: ≈ 1 minute)

SAT_____UNSAT_____

__*__ Performance step: (Denote critical steps with an asterisk)

2.7 Open 1E12-F094, Service Water To RHR B Supp Vlv.

Standard:
Applicant turns switch to OPEN 1E12-F094, verifies Red light ON.

Comment:

SAT_____UNSAT_____

__*__ Performance step: (Denote critical steps with an asterisk)

2.8 Open 1E12-F042B, LPCI Fm RHR B Shutoff Valve

Standard:

Applicant turns switch to OPEN 1E12-F042B, verifies Red light ON.

Comment:

SAT_____UNSAT_____

_____ Performance step: (Denote critical steps with an asterisk)

2.9 Monitor SX flow on flow indicator 1E12-R603B, RHR Pump B Flow.

Standard:

Verifies SX flow on 1E12-F603B

Note: SX flow rises to approximately 1000 gpm on instrument

Comment:

SAT _____ UNSAT _____

Terminating cue:

Shutdown Service Water is being injected into the Reactor Vessel.

SAT _____ UNSAT _____

STOP TIME:_____

CLINTON POWER STATION

JPM Worksheet - B.1.f

VERIFICATION OF COMPLETION

Job Performance Measure No. _____

Examinee's Name:

Examiner's Name:

Date performed:

Facility Evaluator:

Number of attempts:

Time to complete:

Question Documentation:

Question:_____
_____
_____

Response:_____
_____
_____
_____

Result: SAT or UNSAT

Examiner's signature and date: _____ _____

~~Normal~~

INITIATING CUE:

The plant is shutdown following ~~an accident~~ a LOCA. All ECCS is injecting except RHR-B, due to pump failure.

~~Currently no inject source is available to makeup to the RPV.~~

Inject to the Reactor Pressure Vessel using Shutdown Service Water through RHR 'B' per CPS No. 4411.03, ~~Method 2.~~ Appendix A, step 2.0 LPCI has been injecting for greater than 10 minutes

JPM B.1.g was not replaced by Clinton Power Station. It was not video taped and can be found in the NRC submitted operating test.

JPM B.2.a was prepared and submitted by NRC examiners after the original B.2.a was video taped and deleted from the operating examination. It is provided here to keep the material replaced as a result of the video taping together in one place.

Facility: Clinton Task Nos: 044200C533; 014200C516; 041298C511

Task Title: Manually Valve In ADS B/U Air Bottles

Job Performance Measure No: 044200J003 K/A Reference: 2180000A203

Applicability: RO_X___ SRO_X___

Examinee: _____ NRC Examiner: _____

Facility Evaluator: _____ Date: _____

Method of testing:

Simulated Performance _____X_____ Actual Performance _____

Classroom _____ Simulator _____ Plant __X___

READ TO THE EXAMINEE
I will explain the initial conditions, which steps to simulate or discuss, and provide initiating cues. When you complete the task successfully, the objective for this job performance measure will be satisfied.

Initial Conditions:
There has been a station blackout. CPS 4200.01, Loss of AC Power, has been entered and recovery actions are in progress.

Task Standard:
MOV 1IA012A, East Gas Control Boundary (AB 762') and MOV 1IA013A, West above Div 1 H_2O_2 skid (FB 781') have been simulated manually opened.

Required Materials: None

General References:
CPS 4200.01, Loss of AC Power

Initiating Cue:
Due to station blackout, you are directed to place the ADS Backup Air Bottles in service per Step 4.4.8, CPS 4200.01, Loss of AC Power. Examiner to provide Applicant with a copy of CPS 4200.01.

Time Critical Task: NO

Validation Time: ~ 15 minutes.

Simulator Set-up Conditions: None

Start Time: _____

PERFORMANCE INFORMATION

_____ Performance step: (Denote critical steps with an asterisk)
Step 1 Applicant obtains CPS 3101.01, Main Steam.

STANDARD: Applicant obtains CPS 3101.01, Main Steam.

Note to Examiner:
The Loss of AC Power procedure makes a reference to CPS 3101.01. The step of interest is Step 8.2.3. The Applicant does not need to refer to this procedure to complete the task. All of the steps are in the Loss of AC power procedure.

CUE: When Applicant obtains a copy of CPS 3101.01, Main Steam, Examiner to provide Applicant with a copy.

SAT _____ UNSAT _____

___*___ Performance step: (Denote critical steps with an asterisk)
Step 2 Locate and manually OPEN valve 1IA012A (East Gas Control Boundary (AB 762')) [Step 4.4.8, CPS 4200.01]

STANDARD: Applicant locates and simulates manually opening the valve. The Applicant simulates engaging the valve handwheel by pulling the "declutch" lever down. The Applicant then simulates opening the valve by rotating the handwheel counter-clockwise (if the Applicant was facing the handwheel).

CUE: Inform the Applicant that the declutch lever has been pulled down and the handwheel has been turned counter-clockwise (if the operator was facing the handwheel). Inform the Applicant that the valve has opened.

Notes to Examiner:
1. Both the lever and handwheel have arrows indicating the correct operating direction.
2. The "declutch" lever does not need to be held in position while turning the handwheel, once the valve opening mechanism is engaged.
3. The valve is a rising stem valve.
4. The Applicant must simulate climbing on pipes and supports to reach the valve operator to simulate manually opening the valve.

COMMENT:

SAT _____ UNSAT _____

___*___ Performance step: (Denote critical steps with an asterisk)
Step 3 Locate and manually OPEN valve 1IA013A, West above Div 1 H_2O_2 skid (FB 781')). [Step 4.4.8, CPS 4200.01]

STANDARD: Applicant locates and simulates manually opening the valve. The Applicant simulates engaging the valve handwheel by pulling the "declutch" lever down. The Applicant then simulates opening the valve by rotating the handwheel counter-clockwise (if the Applicant was facing the handwheel).

CUE: Inform the Applicant that the declutch lever has been pulled down and the handwheel has been turned counter-clockwise (if the operator was facing the handwheel). Inform the Applicant that the valve has opened.

Notes to Examiner:
1. Both the lever and handwheel have arrows indicating the correct operating direction.
2. The "declutch" lever does not need to be held in position while turning the handwheel, once the valve opening mechanism is engaged.
3. The valve is a rising stem valve.
4. The Applicant must simulate climbing on pipes and supports to reach the valve operator to simulate manually opening the valve.

COMMENT:

SAT _____ UNSAT _____

Terminating cue: The ADS Back up air bottles have been manually valved in.

Stop Time _____

VERIFICATION OF COMPLETION

Job Performance Measure No. _____

Examinee's Name:

Examiner's Name:

Date performed:

Facility Evaluator:

Number of attempts:

Time to complete:

Question Documentation:

Question:_____

_____

_____

_____

Response:_____

_____

_____

_____

_____

Result: SAT or UNSAT

Examiner's signature and date: _____ _____

APPLICANT'S COPY

Initial Conditions:
There has been a station blackout. CPS 4200.01, Loss of AC Power, has been entered and recovery actions are in progress.

Initiating Cue:
Due to station blackout, you are directed to place the ADS Backup Air Bottles in service per Step 4.4.8, CPS 4200.01, Loss of AC Power. Examiner to provide Applicant with a copy of CPS 4200.01.

CLINTON POWER STATION
JPM Worksheet - B.2.b,
Cross Connect DC Distribution Panels 1E and 1F per CPS No. 3503.01

Facility: Clinton Power Station Task No:041263J001

Task Title: Cross Connect DC Distribution Panels 1E and 1F per CPS No. 3503.01

Job Performance Measure No:041263J001

K/A Reference:

263000	A4.01	3.3	3.5

Examinee: _____ NRC Examiner:

Facility Evaluator: _____ Date:

Method of testing:

Simulated Performance ____X____ Actual Performance _____

Classroom _____ Simulator _____ Plant __X__

READ TO THE EXAMINEE

I will explain the initial conditions, which steps to simulate or discuss, and provide initiating cues. When you complete the task successfully, the objective for this job performance measure will be satisfied.

Initial Conditions:
100% POWER, 1E BATTERY CHARGER IS TO BE TAGGED OUT FOR CORRECTIVE MAINTENANCE

Task Standard:

Cross Connect 125 VDC Distribution Panels 1E and 1F, with 1F supplying, per CPS No. 3503.01, Section 8.2.6.3.

CLINTON POWER STATION
JPM Worksheet - B.2.b,
Cross Connect DC Distribution Panels 1E and 1F per CPS No. 3503.01

Required Materials: None

General References:

CPS No. 3503.01, BATTERY AND DC DISTRIBUTION

Initiating Cue:

You have been directed by Main Control Room personnel to cross-connect DC Distribution Panels 1E and 1F with 1F supplying, per CPS 3503.01, Section 8.2.6.3. Examiner to provide Applicant with a copy of CPS 3503.01

Time Critical Task: YES/**NO**

Validation Time: 8 minutes

Simulator Set-up Conditions:

None

Start Time_____

PERFORMANCE INFORMATION

CAUTION
Do not exceed tie breakers amp rating of 225 amps.

NOTE
DC MCC 1E and 1F Tie Breakers must both be ON to complete the crosstie.

Not critical

___ Performance step: (Denote critical steps with an asterisk)

8.2.6.3 Supplying 125 VDC Distribution Panel 1E from 1F
a) Verify 1E and 1F voltages are approximately equal.

Standard: The operator locates and reads the voltage indicated on 125 VDC Distribution Panels 1E and 1F.

Cue: The voltages are as indicated on the meters.

Comment: ~~Should~~ If the panel(s) be de-energized due to ~~the~~ actual plant conditions, inform the applicant that the voltages are approximately 134 VDC.

SAT_____UNSAT_____

___*___ Performance step: (Denote critical steps with an asterisk)

8.2.6.3 b) Place the following breakers to ON:
1) 125 VDC Dist Pnl 1F tie Breaker at DC MCC 1E cub 6B
2) 125 VDC Dist Pnl 1E tie Breaker at DC MCC 1F cub 7A

Standard: The operator positions the breaker control handle in the UP position at DC MCC 1E cub 6B.
The operator rotates the breaker control handle counterclockwise to the ON position at DC MCC 1F cub 7A.

Cue: The breaker control handle is in the UP position (at DC MCC 1E cub 6B).
The breaker control handle rotates counterclockwise and is in the ON position (at DC MCC 1F cub 7A)

Comment: These breakers may be positioned in either sequence.

SAT_____UNSAT_____

_____ Performance step: (Denote critical steps with an asterisk)

8.2.6.3 c) Verify the breakers in the previous sub-step did not trip when closed:
1) 125 VDC Dist Pnl 1F tie Breaker at DC MCC 1E cub 6B
2) 125 VDC Dist Pnl 1E tie Breaker at DC MCC 1F cub 7A

Standard: The operator verifies the breakers at DC MCC 1E cub 6B and DC MCC 1F cub 7A are CLOSED.

Cue: The breakers at DC MCC 1E cub 6B and DC MCC 1F cub 7A are CLOSED.

Comment:

SAT_____UNSAT_____

CAUTION
The distribution panel 1E supply breaker is located **INSIDE** the distribution panel on DC MCC 1E cub 4A.

___*___ Performance step: (Denote critical steps with an asterisk)

8.2.6.3 d) Place 125 VDC Dist Pnl 1E Supply Breaker in OFF at DC MCC 1E cub 4A.

Standard: The operator opens the 1E distribution panel door and moves the supply breaker handle to the DOWN position.

Cue: The 1E supply breaker handle moves downward and latches in the DOWN position.

Comment:

SAT_____UNSAT_____

Terminating cue:

DC Distribution Panels 1E and 1F are cross-tied with Distribution Panel 1F supplying.

VERIFICATION OF COMPLETION

Job Performance Measure No. _____

Examinee's Name:

Examiner's Name:

Date performed:

Facility Evaluator:

Number of attempts:

Time to complete:

Question Documentation:

Question:_____

_____

_____

Response:_____

_____

_____

_____

Result: SAT or UNSAT

Examiner's signature and date: _____ _____

INITIATING CUE

You have been directed by Main Control Room personnel to cross-connect DC Distribution Panels 1E and 1F with 1F supplying, per CPS 3503.01, Section 8.2.6.3. Examiner to provide Applicant with a copy of CPS 3503.01.

Add Initial Conditions

JPM Worksheet B.2.c

Transfer of CCW Temp Reg. Valve from Auto To Manual Hand Wheel per CPS No. 3203.01

Facility: Clinton Power Station Task No: 044208C506

Task Title: Transfer of CCW Temp Reg. Valve from Auto To Manual Hand Wheel

Job Performance Measure No: New K/A Reference: 400000A203

Applicability: RO X SRO X

Examinee: _____ NRC Examiner:

Facility Evaluator: _____ Date:

Method of testing:

Simulated Performance X Actual Performance _____

Classroom _____ Simulator _____ Plant X

READ TO THE EXAMINEE

I will explain the initial conditions, which steps to simulate or discuss, and provide initiating cues. When you complete the task successfully, the objective for this job performance measure will be satisfied.

Initial Conditions:

CCW Heat Exchanger 1A Valve 1WS018A, Temperature Controller 1TIC-CC045 has failed to maintain CC temperature and is in Manual at 1PA05J. The B CCW Heat Exchanger is out of service for tube cleaning.

Task Standard:

CCW temperature controlled by 1WS018A Manual Handwheel

Required Materials: None

General References:

CPS No. 3203.01 Component Cooling Water (CC)

Initiating Cue:

CCW Heat Exchanger 1A Valve 1WS018A, Temperature Controller 1TIC-CC045 has failed to maintain CC temperature and is in Manual at 1PA05J. The B CCW Heat Exchanger is out of service for tube cleaning. Place the A CCW Temp Reg Valve in Manual and Control CC Temperature. CC temperature is too high.

CURRENTLY

JPM Worksheet B.2.c

Transfer of CCW Temp Reg. Valve from Auto To Manual Hand Wheel per CPS No. 3203.01

Time Critical Task: NO

Validation Time: 8 minutes

Start Time:_____

Transfer of CCW Temp Reg. Valve from Auto To Manual Hand Wheel per CPS No. 3203.01

PERFORMANCE INFORMATION

NOTE:

Provided in Initial Conditions - Step 8.1.4.1.1, 1TIC-CC045 in Manual at 1PA05J

_____ Performance step: (Denote critical steps with an asterisk)

Step 8.1.4.1.2 Isolate Instrument Air to 1WS018A by closing the following valves
a) 1IA190, 1WS018A Instrument Air Inlet Block Valve
b) 1IA842A, 1WS018A IA Inlet Isol Valve

Standard:

a) Applicant indicates turning handwheel for valve 1IA190 clockwise
b) Applicant indicates turning handwheel for valve 1IA842A clockwise.

Cue: After several turns clockwise cue valve CLOSED.

Comment:

SAT_____UNSAT_____

__*_____ Performance step: (Denote critical steps with an asterisk)

Step 8.1.4.1.3 Equalize pressure across the diaphragm by opening 1TYCC045EV, diaphragm equalizing valve.

Standard:

Applicant indicates turning handwheel for valve 1TYCC045EV counter-clockwise.

Cue: After several turns counter-clockwise cue valve OPEN.

Comment:
Procedure Cautions, Operation of 1WS018A in the MANUAL HANDWHEEL mode, without equalizing pressure across the diaphragm, will prevent closing the valve and may damage the diaphragm.

SAT_____UNSAT_____

Transfer of CCW Temp Reg. Valve from Auto To Manual Hand Wheel per CPS No. 3203.01

__*_____ Performance step: (Denote critical steps with an asterisk)

Step 8.1.4.1.4 Insert the pin into the valve actuator which places the 1WS018A in the Manual handwheel Mode.

NOTE:
Label on valve 1WS018A says "Engage: align notch in pointer to hole in gear and push ring."

Standard:

Applicant indicates inserting pin into valve actuator for 1WS018A

Comment:

SAT_____UNSAT_____

_____ Performance step: (Denote critical steps with an asterisk)

Coordinates open of 1WS018A with MCR to reduce CC temperature by opening valve.

Cue:

As MCR respond that CC temperature is on a slow trend down following opening of 1WS018A

Standard:

Applicant operates 1WS018A handwheel counter-clockwise to open valve.
Applicant contacts Main Control Room to adjust CC temperature.

Comment:

SAT_____UNSAT_____

Terminating cue:

1WS018A in being operated in the Manual Handwheel Mode.

SAT_____UNSAT_____

Stop Time_____

JPM Worksheet B.2.c

Transfer of CCW Temp Reg. Valve from Auto To Manual Hand Wheel per CPS No. 3203.01

VERIFICATION OF COMPLETION

Job Performance Measure No. _____

Examinee's Name:

Examiner's Name:

Date performed:

Facility Evaluator:

Number of attempts:

Time to complete:

Question Documentation:

Question:_____

_____

_____

_____

Response:_____

_____

_____

_____

_____

Result: SAT or UNSAT

Examiner's signature and date: _____ _____

Initiating Cue:

The B CCW Heat Exchanger is out of service for tube cleaning.
CCW Heat Exchanger 1A valve 1WS018A, Temperature Controller 1TIC-CC045 has failed to maintain CC temperature and is in Manual at 1PA05J.
Place the A CCW Temp Reg. Valve in the Manual Handwheel Mode of Operation.

FINAL AS-ADMINISTERED INITIAL EXAMINATION

FOR CLINTON THE WEEK OF JUNE 12, 2000

As- Run Operating Test & Written Examination

Contains the following:

As-run operating test (Admin JPMs (RO/SRO), Operating JPMs, Scenario 1, Scenario 2

RO Written Examination/Key, SRO Written Examination/Key

FINAL AS-ADMINISTERED OPERATING TEST

FOR CLINTON THE WEEK OF JUNE 12, 2000

FINAL AS-ADMINISTERED ADMINISTRATIVE JPMS

FOR CLINTON THE WEEK OF JUNE 12, 2000

Admin JPM Worksheet RO A.1.a

Core Thermal Limits

Facility: Clinton

Task No: 011298C524

Task Title: Interpret Core Thermal Limits

Job Performance Measure No: NEW

K/A Reference: 2.1.25

Examinee: _____

NRC Examiner: _____

Facility Evaluator: _____

Date: _____

Method of testing:

Simulated Performance _____

Actual Performance _____

Classroom X

Simulator _____

Plant _____

READ TO THE EXAMINEE

I will explain the initial conditions, which steps to simulate or discuss, and provide initiating cues. When you complete the task successfully, the objective for this job performance measure will be satisfied.

Initial Conditions:
The plant is in a normal 100% power lineup

Task Standard:
All Core Thermal Limit violations have been identified.

Required Materials:
3D Monicore Periodic Log

General References:
CPS 9820.01 Power Distribution Limits, Step 8.0, Procedure

Initiating Cue:
The CRS has directed you to review a 3D Monicore Periodic Log. Examiner provides Applicant with a copy of the 3D Monicore Periodic Log.

Time Critical Task: NO

Validation Time: 15 minutes

Start Time: _____

PERFORMANCE INFORMATION

_____ Performance step:

Step 1: Determine the highest MFLCPR value.

Standard:

Applicant determines the highest MFLCPR value is ≤ 1.0.

Comment:

SAT_____ UNSAT_____

_____ Performance step:

Step 2: Determine the highest MFLPD value.

Standard:

Applicant determines the highest MFLPD value is ≤ 1.0.

Comment:

SAT_____ UNSAT_____

____*____ Performance step:

Step 3: Determine the highest MAPRAT value.

Standard:

Applicant determines the highest MAPRAT value is out of specification.
Indicated value is 1.001

Comment:

SAT_____ UNSAT_____

Terminating cue:

MAPRAT greater than 1.000 has been reported to the CRS.

Stop Time:_____

VERIFICATION OF COMPLETION

Job Performance Measure No. _____

Examinee's Name:

Examiner's Name:

Date performed:

Facility Evaluator:

Number of attempts:

Time to complete:

Question Documentation:

Question:_____

_____

_____

Response:_____

_____

_____

_____

Result: SAT or UNSAT

Examiner's signature and date: _____ _____

APPLICANTS COPY

Initial Conditions:
The plant is in a normal 100% power lineup

Initiating Cue:
The CRS has directed you to review a 3D Monicore Periodic Log. Examiner provides Applicant with a copy of the 3D Monicore Periodic Log.

Facility: Clinton Task No: 013299C003

Task Title: Verify Plant Parameters for Reactor Mode Change

Job Performance Measure No: NEW K/A Reference: 2.1.23

Examinee: _____ NRC Examiner: _____

Facility Evaluator: _____ Date: _____

Method of testing:

Simulated Performance X Actual Performance _____

Classroom _____ Simulator X Plant _____

READ TO THE EXAMINEE
I will explain the initial conditions, which steps to simulate or discuss, and provide initiating cues. When you complete the task successfully, the objective for this job performance measure will be satisfied.

Initial Conditions:
Reactor Pressure 936 psig., Reactor Power 8 - 10%.
CPS No. 3002.1 is done through step 8.6.4.c

Task Standard: Identify that plant conditions do not support changing to Mode 1

Required Materials: CPS No. 3002.01, Heatup and Pressurization

General References:

Simulator Setup Conditions:
1. Initialize simulator to IC that is ready for Mode 1
2. Insert malfunction LPRM_1439I_Action1 - A FLUXLEVEL @ 0.42

Initiating Cue:
The CRS has directed you to review plant conditions to ensure they support transferring the Reactor mode Switch to RUN and complete CPS 3002.01 steps 8.6.4 d) and e)

Time Critical Task: NO

Validation Time: 5 minutes

Start Time: _____

PERFORMANCE INFORMATION

_____ Performance step:

Step 1: Verifies Plant Parameters:
1) Reactor Power 8 - 10%.
2) Reactor Pressure 936 psig
3) Turbine Bypass Valves open

Standard:

Applicant determines plant parameters meet requirements
Power
Pressure
Bypass Valve

____*____ Performance step:

Step 2: Verifies proper IRM & APRM overlap by verifying all operable APRMs read between 5% and 12% with all operable IRMs on scale.

Standard:

Applicant determines that "B" APRM is reading 13%.

_____ Performance step:

Step 3: Verify/place all MOV TEST PREP switches in normal.

Standard:

Applicant verifies all MOV TEST PREP switches are in normal.

Terminating cue:

The "B" APRM reading 13% has been reported to the CRS, and the requirements to enter Mode 1 have not been met.

Stop Time:_____

VERIFICATION OF COMPLETION

Job Performance Measure No. _____

Examinee's Name:

Examiner's Name:

Date performed:

Facility Evaluator:

Number of attempts:

Time to complete:

Question Documentation:

Question:_____
_____
_____

Response:_____
_____
_____
_____

Result: SAT or UNSAT

Examiner's signature and date: _____ _____

APPLICANT'S COPY

Initial Conditions:
Reactor Pressure 936 psig., Reactor Power 8 - 10%.
CPS No. 3002.1 is done through step 8.6.4.c

Initiating Cue:
The CRS has directed you to review plant conditions to ensure they support transferring the Reactor mode Switch to RUN and complete CPS 3002.01 steps 8.6.4 d) and e).

Facility: Clinton Task No: _____

Task Title: RWCU Pump Tagout Boundary

Job Performance Measure No: 035299J001 K/A Reference: G 2.2.13

Applicability: RO__X___ SRO _____

Examinee: _____ NRC Examiner: _____

Facility Evaluator: _____ Date: _____

Method of testing:

Simulated Performance _____ Actual Performance __X_____

Classroom ___X____ Simulator _____ Plant (OSC) __X____

READ TO THE EXAMINEE
I will explain the initial conditions, which steps to simulate or discuss, and provide initiating cues. When you complete the task successfully, the objective for this job performance measure will be satisfied.

Initial Conditions: A leak in the A-RWCU pump mechanical seal was identified last shift. The pump has been secured. A tagout for the pump (mechanical) needs to be developed.

Task Standard: Applicant correctly identifies isolation valves and vent and drain valves and their position on the P&IDs needed to allow replacement of the mechanical seal on the A-RWCU pump.

Required Materials: P&IDs for RWCU, Aux Bldg Floor Drains, & CCW.

General References: CPS 1014.01, Safety Tagging

Initiating Cue: You are an extra RO on shift. You are directed to identify the isolation valves and vent and drain valves and their position to isolate and drain the A-RWCU pump to allow mechanical seal replacement. Use P&IDs to identify the valves and their positions.

Time Critical Task: ~~YES~~ / NO

Validation Time: 10 minutes.

Simulator Set-up Conditions: None.

Start Time: _____

PERFORMANCE INFORMATION

_____ Performance step: (Denote critical steps with an asterisk)
Step 1: Applicant obtains P&IDs for RWCU (MO5-1076), CCW (MO5-1032), and Vents & Drains (MO5-1047).

STANDARD: Applicant obtains P&IDs for RWCU (RT), Aux Bldg Floor Drains (RF), & CCW (CC).

SAT _____ UNSAT _____

___*____ Performance step: (Denote critical steps with an asterisk)
Step 2: Applicant correctly identifies isolation valves and their position needed to allow replacement of the mechanical seal on the A-RWCU pump.

STANDARD:
Applicant correctly identifies isolation valves and their position on the P&IDs needed to allow replacement of the mechanical seal on the A-RWCU pump.
RWCU (1G33) valves:

1G33-FO43A, RWCU Pump-A Suction Isolation. (SHUT) **(Critical)**
-FO05A, RWCU Pump-A Suction Isolation. (SHUT) **(Critical)**
-FO13A, RWCU Pump-A Discharge Isolation. (SHUT) **(Critical)**
-FO45A, RWCU Pump-A Discharge Orifice Isolation. (SHUT) **(Critical)**
-F308A, RWCU Pump-A Suction Header Drain Isolation. (OPEN) **(Critical)**
-F309A, RWCU Pump-A Suction Header Drain Isolation. (OPEN) **(Critical)**
-F010A, RWCU Pump-A Vent Isolation. (OPEN) **(Critical)**
-F011A, RWCU Pump-A Vent Isolation. (OPEN) **(Critical)**
-F008A, RWCU Pump-A Drain Isolation. (OPEN) **(Critical)**
-F009A, RWCU Pump-A Drain Isolation. (OPEN) **(Critical)**

Component Cooling Water (1CC) valves:

1CC-1CC045A, RWCU Pump-A Seal Cooler Inlet Isolation. (SHUT) (Non-Critical)
-1CC046A, RWCU Pump-A Seal Cooler Outlet Isolation. (SHUT) (Non-Critical)

Note to Examiner:
The Applicant may identify three other valves that could be added to the tagout, but are NON-CRITICAL and according to the licensee, not necessary.

- 1G33-F404A, CY Fill Connection Isolation (SHUT) (Non-Critical)
- 1G33-F405A, CY Fill Connection Isolation (SHUT) (Non-Critical)
- 1G33-F611A, RWCU Pump-A Seal Cooler Vent Isolation (OPEN) (Non-Critical)

SAT _____ UNSAT _____

Terminating cue: Applicant correctly identifies isolation valves and their postions on the P&IDs.

Stop Time: _____

VERIFICATION OF COMPLETION

Job Performance Measure No. _____

Examinee's Name:

Examiner's Name:

Date performed:

Facility Evaluator:

Number of attempts:

Time to complete:

Question Documentation:

Question:_____

_____

_____

_____

Response:_____

_____

_____

_____

_____

Result: SAT or UNSAT

Examiner's signature and date: _____ _____

APPLICANT'S COPY

Initial Conditions: A leak in the A-RWCU pump mechanical seal was identified last shift. The pump has been secured. A tagout for the pump (mechanical) needs to be developed.

Initiating Cue: You are an extra RO on shift. You are directed to identify the isolation valves and vent and drain valves and their position to isolate and drain the A-RWCU pump to allow mechanical seal replacement. Use P&IDs to identify the valves and their positions.

Equipment ID:

1 -RT -1G33C001A -MP

Description / Special Inst:

THIS CLEARANCE SECTION IS FOR TRAINING PURPOSES ONLY!

This Clearance Section removes RT Pump A from service for pump seal replacement.
Ensure RT Pump "A" is S/D and vented in accordance with CPS 3303.01 prior to hanging Section.
References: M05-1076-004, M05-1047-007, M05-1032-002, M05-9076-001 & E02-1RT99-004.

Reason

See work document description.

Hazards

CC is isolated but not vent/drained as discussed with Mechanical Maintenance.
RT Pump "A" suction has double valve protection, discharge has only single valve protection. It the discharge valve leaks by the RT System will have to be shutdown and isolated.

Restoration Inst:

Ensure any TSR Package has been cleared prior to returning system to service.
Restoration position in accordance with 3203.01V001, 3303.01E001 & 3303.01V001

Attribute Description	Attribute Value
ITS, ORM or ODCM impacts.	No
Annunciator impacts.	None
Notify the following prior to hanging.	None

Number	Equipment ID	Description
FXXXXX REV. 00	1 -RT -1G33C001A -MP	Repair/replace pump seal.

Status	Description	User	Verification Date
Prepared	Prepared By	PINKERTON, JIM	05/24/2000 16:34
Technical Reviewed	Technical Reviewed By		00/00/0000 00:00
Tagging Authority Approval	Tagging Authority Approved By		00/00/0000 00:00
Hung	Hung By		00/00/0000 00:00
Verified Hung	Verified Hung By		00/00/0000 00:00
Drained / Vented or N/A	Drained/Vented or N/A		00/00/0000 00:00
Removal Prepared.	Removal Prepared By		00/00/0000 00:00
Removal Approved	Removal Approved By		00/00/0000 00:00
Tags Removed	Tags Removed By		00/00/0000 00:00
Tags Verified Removed	Tags Verified Removed By		00/00/0000 00:00
Section Archived	Section Archived By		00/00/0000 00:00

Equipment ID	Equipment Description	Equipment Location	Tag Serial	Tag Type	Place. Config.	Place. Seq.	Rest. Config.	Rest. Seq.	Notes
1 -RT -1G33AS005A -IH	RWCU RECIRC PUMP A CONTROL SWITCH	CB - - -800-MCR -1H13-P680		Information	NOT DEPRESSED	1	STOP	3	Pump is DTO for seal replacement.
01-AP -1AP27E7A -E	RWCU RECIRCULATION PUMP 1A 1G33-C001A BREAKER	AB -S -117-762- -AB MCC 1D COMPT. 7A		Danger	OFF	2	ON	2	
1 -RT -1G33F043A -VGT	RWCU PUMP A SUCT ISOL	AB -800-121-750- -MEZZ		Danger	SHUT	3	SHUT	1	
1 -RT -1G33F005A -VGT	RWCU PUMP A SUCT ISOL	AB -AA -121-737- -RT A PUMP ROOM		Danger	SHUT	3	SHUT	1	
1 -RT -1G33F013A -VGT	RWCU PUMP A DISCH ISOL	AB -AA -121-750- -MEZZ		Danger	SHUT	3	SHUT	1	
1 -RT -1G33F045A -VGB	RWCU PUMP A DISCH ORIF ISOL	AB -AA -121-750- -MEZZ		Danger	SHUT	3	SHUT	1	
1 -CC -1CC045A -VGB	RWCU PUMP 1A SEAL COOL INLT	AB -AA -118-737- -RT A PUMP ROOM		Danger	SHUT	3	OPEN	1	
1 -CC -1CC046A -VGB	RWCU PUMP 1A SEAL COOL OUTLT	AB -AA -118-737- -RT A PUMP ROOM		Danger	SHUT	3	OPEN	1	
1 -RT -1G33F308A -VGB	RWCU PUMP A SUCT HDR DRN	AB -AA -121-737- -RT A PUMP ROOM		Information	OPEN	4	SHUT	1	
1 -RT -1G33F309A -VGB	RWCU PUMP A SUCT HDR DRN	AB -AA -121-737- -RT A PUMP ROOM		Information	OPEN	4	SHUT	1	
1 -RT -1G33F010A -VGB	RWCU PUMP A VENT	AB -AA -121-737- -MEZZ		Information	OPEN	4	OPEN	1	
1 -RT -1G33F011A -VGB	RWCU PUMP A VENT	AB -AA -121-737- -RT A PUMP ROOM		Information	OPEN	4	OPEN	1	
1 -RT -1G33F008A -VGB	RWCU PUMP A DRN	AB -AA -121-737- -RT A PUMP ROOM		Information	OPEN	4	SHUT	1	
1 -RT -1G33F009A -VGB	RWCU PUMP A DRN	AB -AB -121-737- -RT A PUMP ROOM		Information	OPEN	4	SHUT	1	

Component	Note No.	Note Text
01-AP -1AP27E7A -E	1	MCC "Contacts OPEN" BKR check: Int _____ Date _____

Admin JPM Worksheet RO A.3 Identify Dose Rate for RWCU Pump Tagout

Facility: Clinton Task No: _____

Task Title: Identify Dose Rate for RWCU Pump Tagout

Job Performance Measure No: New K/A Reference: G 2.3.1

Applicability: RO__X___ SRO_X__

Examinee: _____ NRC Examiner: _____

Facility Evaluator: _____ Date: _____

Method of testing:

Simulated Performance _____ Actual Performance __X_____

Classroom __X____ Simulator _____ Plant (OSC) __X____

READ TO THE EXAMINEE
I will explain the initial conditions, which steps to simulate or discuss, and provide initiating cues. When you complete the task successfully, the objective for this job performance measure will be satisfied.

Initial Conditions: A leak in the A-RWCU pump mechanical seal was identified last shift. The pump has been secured and the tagout has been developed. RP has competed its survey and no airborne radiation was identified. The Work Control Center estimated that it would take about 30 minutes for 1 individual to hang the tags on the A-RWCU pump.

Task Standard: Applicant has determined that he/she would NOT be able to hang tags and remain within CPS administrative dose limits. The Applicant would receive about 60 mRem dose completing the job. Applicant would exceed the 4000 mRem annual limit.

Required Materials: Dose map for the RWCU pump room.

General References: CPS 1024.15, Occupational Radiation Exposure Control & Monitoring.

Initiating Cue: It is December 29, 2001, and you an extra RO on shift.

Your dose history for 2001 is as follows:

Dose for January 2001: 7 mRem TEDE
2005 mRem TEDE from Grand Gulf (you were on a rotation during a forced outage from 2/01 to 6/30/01.
1881 mRem TEDE from Clinton (special LPRM replacement project during forced outage (7/1 - 9/30/01).
Dose for October 2001: 15 mRem TEDE
Dose for November 2001: 18 mRem TEDE
Current Dose for month of December 2001: 16 mRem TEDE. No dose for today.

Determine if you can hang the tags and not exceed any exposure limits. If ANY exposure limits are exceeded, identify the limit. Examiner provide Applicant with RWCU pump room dose map.

Time Critical Task: ~~YES~~ / **NO**

Validation Time: 15 minutes.

Simulator Set-up Conditions: None.

Start Time: _____

PERFORMANCE INFORMATION

__*____ Performance step: (Denote critical steps with an asterisk)

Step 1: Applicant reviews dose history and determines:

Total yearly dose to date is: 3942 mR TEDE (less than CPS 4000 mR admin limit)
Clinton yearly dose is: 1937 mR TEDE. (less than CPS 2000 mR admin limit)
Applicant has a dose margin of 58 mR TEDE (using 4000 mR limit)
Applicant has a dose margin of 63 mR TEDE (using 2000 mR limit)
Applicant has received 16 mR TEDE for the month of December 2001. No dose today.

Based on dose reading on survey map, the general dose rate for the area is 120 mR/hr. For a 30 minute job, the individual will receive about 60 mR.

STANDARD:

- Applicant would NOT be able to hang tags and remain within CPS administrative dose limits. **(Critical)**

- Applicant determines he/she:
  will exceed 4000 mR TEDE limit, **(Critical)**
  will not exceed 2000 mR TEDE limit, and (Non-Critical)
  will exceed monthly goal of 40 TEDE mR. (Non-Critical)

Note to Examiner:
CPS annual TEDE administrative limit of 2000mR for exposure received only from CPS.
CPS annual TEDE administrative limit of 4000mR for exposure received from any facility.
CPS monthly exposure goal is about 40 mR TEDE . (Not an administrative limit.)

SAT _____ UNSAT _____

Terminating cue:.
Applicant has determined that he/she would NOT be able to hang tags and remain within CPS administrative dose limits.
Applicant would exceed 4000mR TEDE limit.

Stop Time: _____

VERIFICATION OF COMPLETION

Job Performance Measure No. _____

Examinee's Name:

Examiner's Name:

Date performed:

Facility Evaluator:

Number of attempts:

Time to complete:

Question Documentation:

Question:_____

_____

_____

_____

Response:_____

_____

_____

_____

_____

Result: SAT or UNSAT

Examiner's signature and date: _____ _____

APPLICANT'S COPY

Initial Conditions: A leak in the A-RWCU pump mechanical seal was identified last shift. The pump has been secured and the tagout has been developed. RP has competed its survey and no airborne radiation was identified. The Work Control Center estimated that it would take about 30 minutes for 1 individual to hang the tags on the A-RWCU pump.

Initiating Cue: It is December 29, 2001, and you an extra RO on shift.

Your dose history for 2001 is as follows:

Dose for January 2001: 7 mRem TEDE
2005 mRem TEDE from Grand Gulf (you were on a rotation during a forced outage from 2/01 to 6/30/01.
1881 mRem TEDE from Clinton (special LPRM replacement project during forced outage (7/1 - 9/30/01).
Dose for October 2001: 15 mRem TEDE
Dose for November 2001: 18 mRem TEDE
Current Dose for month of December 2001: 16 mRem TEDE. No dose for today.

Determine if you can hang the tags and not exceed any exposure limits. If ANY exposure limits are exceeded, identify the limit. Examiner provide Applicant with RWCU pump room dose map.

RP-1125-03
09/25/1998

CPS RADIOLOGICAL SURVEY SHEET

Aux. Building - 737'EL.

Reactor Water Cleanup Pump (A)

Survey Index No: ___-___-___-___

: _____ Time: _____

Type: ☐RWP ☐Other:

Performed By: _____

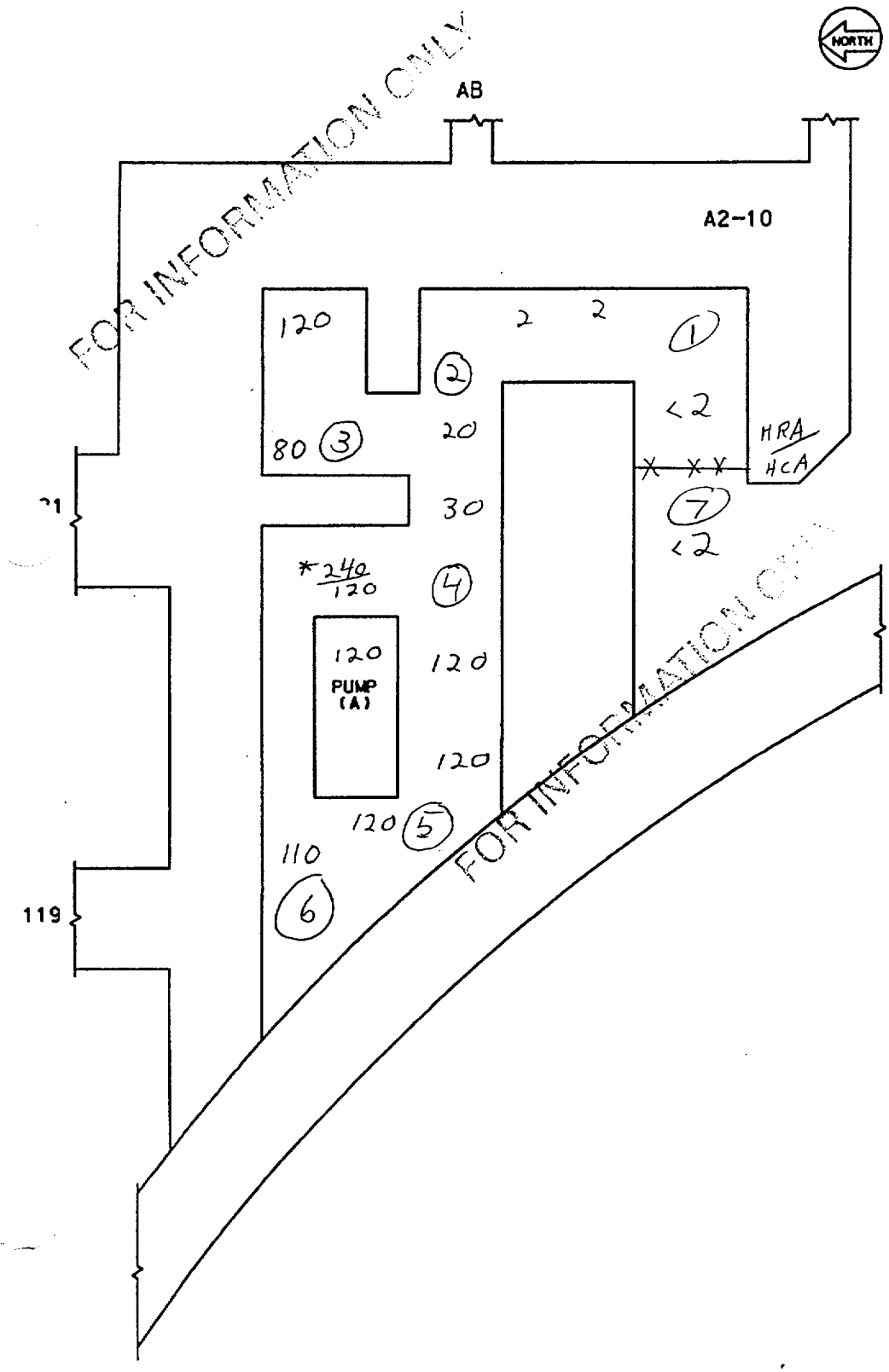
Counted By: _____

Reviewed By: _____ Date: _____

	RADIATION	CONTAMINATION
Inst. Type		
Serial #		
Cal Due Date		

Rx Power _____ Bkgd. _____(cpm)

FOR INFORMATION ONLY



Smear/Location No	dpm/100cm²	Smear/Location No	/
1	7K		
2	10K		
3	15K		
4	25K		
5	25K		
6	25K		
7	<1K		

Remarks:

MRRR/RWP: _____

Tech Dose Received: _____ mR

Notes: Gross Masslinn (~100 ft²)

1. Gen. Area Dose Rates in mRem/hr.
2. *#/# = Contact/30cm Dose Rates
3. Smears Taken at Circled Locations
4. X-X = Radiological Boundary
5. RCA = Radiological Control Area
6. CA = Contaminated Area
7. HCA = High Contamination Area
8. RA = Radiation Area
9. HRA = High Radiation Area
10. RHRA= Restricted High Radiation Area
11. T = Transfer Area
12. CAB = Clean Area Boundary

RP-1125-03
09/25/1998

CPS RADIOLOGICAL SURVEY SHEET

Aux. Building - 737'EL.

Reactor Water Cleanup Pump (A)

Survey Index No: ____ - ____ - ____ - ____

Date: _____ Time: _____

Type: ☐ RWP ☐ Other: _____

Performed By: _____

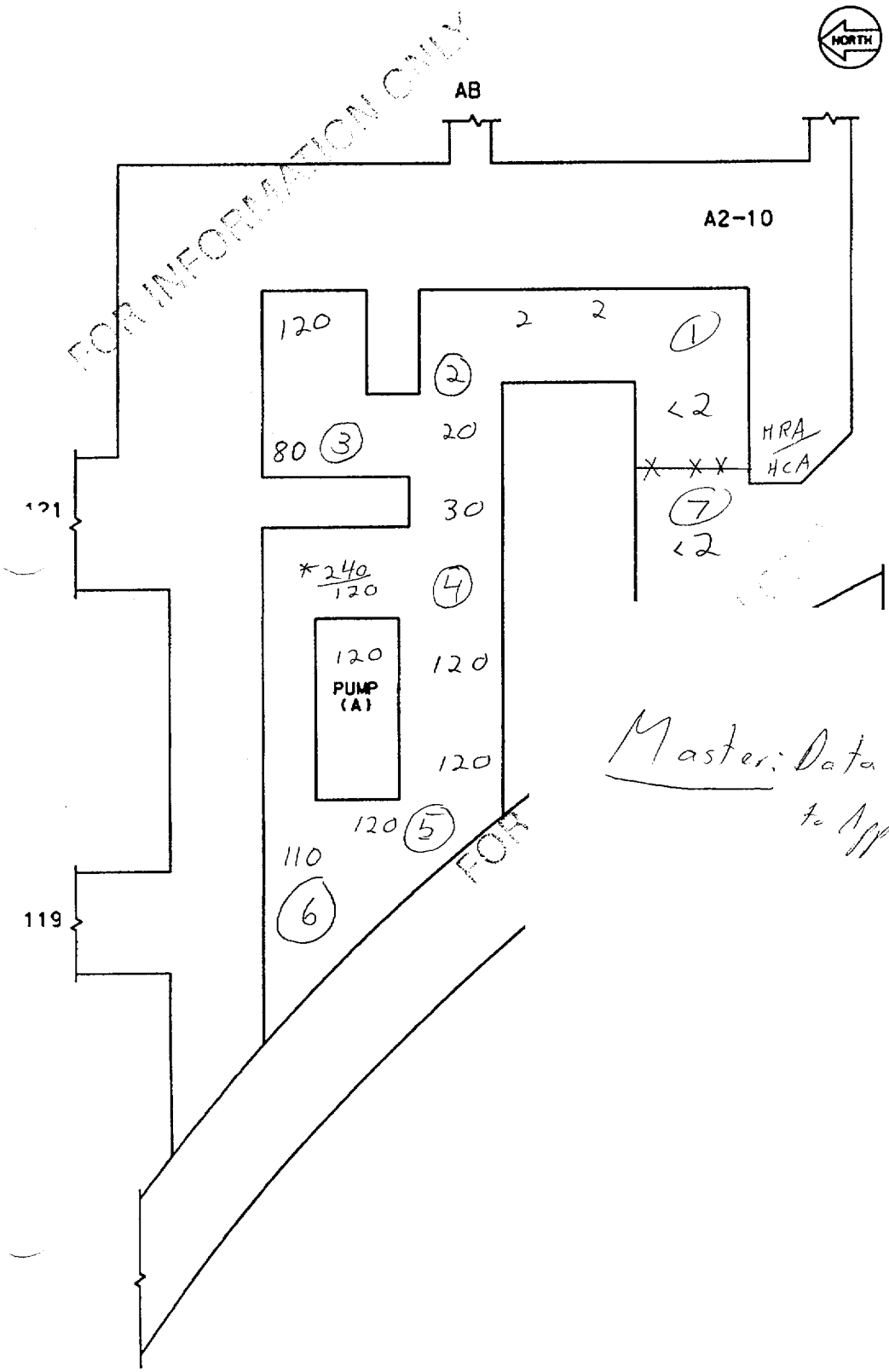
Counted By: _____

Reviewed By: _____ Date: _____

	RADIATION	CONTAMINATION
Inst. Type		
Serial #		
Cal Due Date		

Rx Power _____ Bkgd. _____ (cpm)

FOR INFORMATION ONLY



Smear/Location No	dpm/100cm²	Smear/Location No	
1	7K		
2	10K		
3	15K		
4	25K		
5	25K		
6	25K		
7	<1K		

Master: Data given to Applicant

Remarks:

R/RWP: _____

Tech Dose Received: _____ mR

Notes: Gross Masslinn (~100 ft²)

1. Gen. Area Dose Rates in mRem/hr.
2. * # / # = Contact/30cm Dose Rates
3. Smears Taken at Circled Locations
4. X-X = Radiological Boundary
5. RCA = Radiological Control Area
6. CA = Contaminated Area
7. HCA = High Contamination Area
8. RA = Radiation Area
9. HRA = High Radiation Area
10. RHRA= Restricted High Radiation Area
11. T = Transfer Area
12. CAB = Clean Area Boundary

P-1125-03
09/25/1998

CPS RADIOLOGICAL SURVEY SHEET

Aux. Building - 737'EL.

Reactor Water Cleanup Pump (A)

Survey Index No: ____ - ____ - ____ - ____

_____ Time: _____

☐ RWP ☐ Other: _____

Performed By: _____

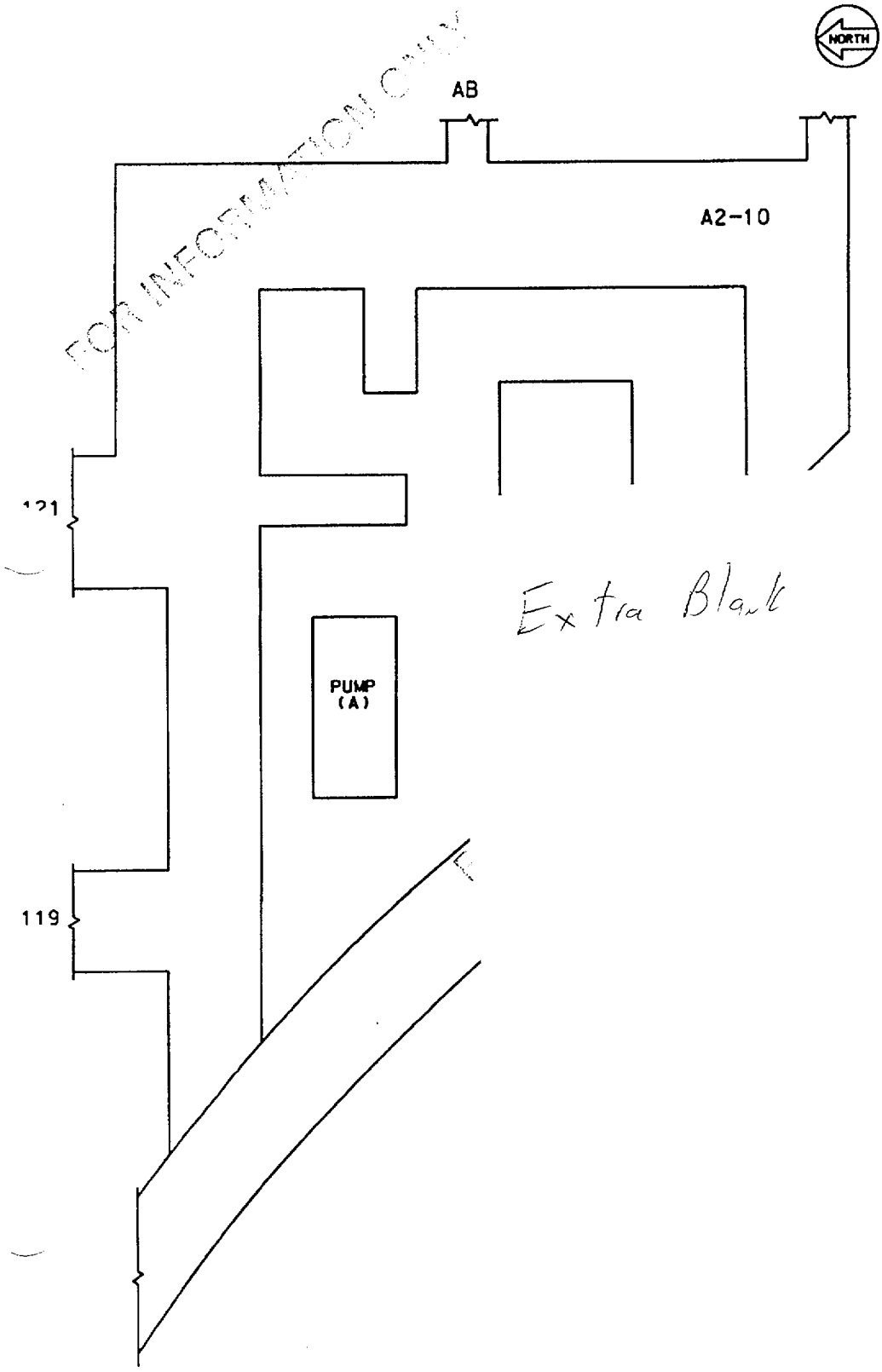
Counted By: _____

Reviewed By: _____ Date: _____

	RADIATION	CONTAMINATION
Inst. Type		
Serial #		
Cal Due Date		

Rx Power _____ Bkgd. _____ (cpm)

FOR INFORMATION ONLY



Smear/Location No	dpm/100cm²	Smear/Location No	/

Remarks:

MRRR/RWP: _____

Tech Dose Received: _____ mR

Notes: Gross Masslinn (~100 ft²)

1. Gen. Area Dose Rates in mRem/hr.
2. *# / # = Contact/30cm Dose Rates
3. Smears Taken at Circled Locations
4. X-X = Radiological Boundary
5. RCA = Radiological Control Area
6. CA = Contaminated Area
7. HCA = High Contamination Area
8. RA = Radiation Area
9. HRA = High Radiation Area
10. RHRA= Restricted High Radiation Area
11. T = Transfer Area
12. CAB = Clean Area Boundary

RP-1125-03
09/25/1998

CPS RADIOLOGICAL SURVEY SHEET

Aux. Building - 737'EL.

Reactor Water Cleanup Pump (A)

Survey Index No: ____ - ____ - ____ - ____

_____ Time: _____

☐ RWP ☐ Other: _____

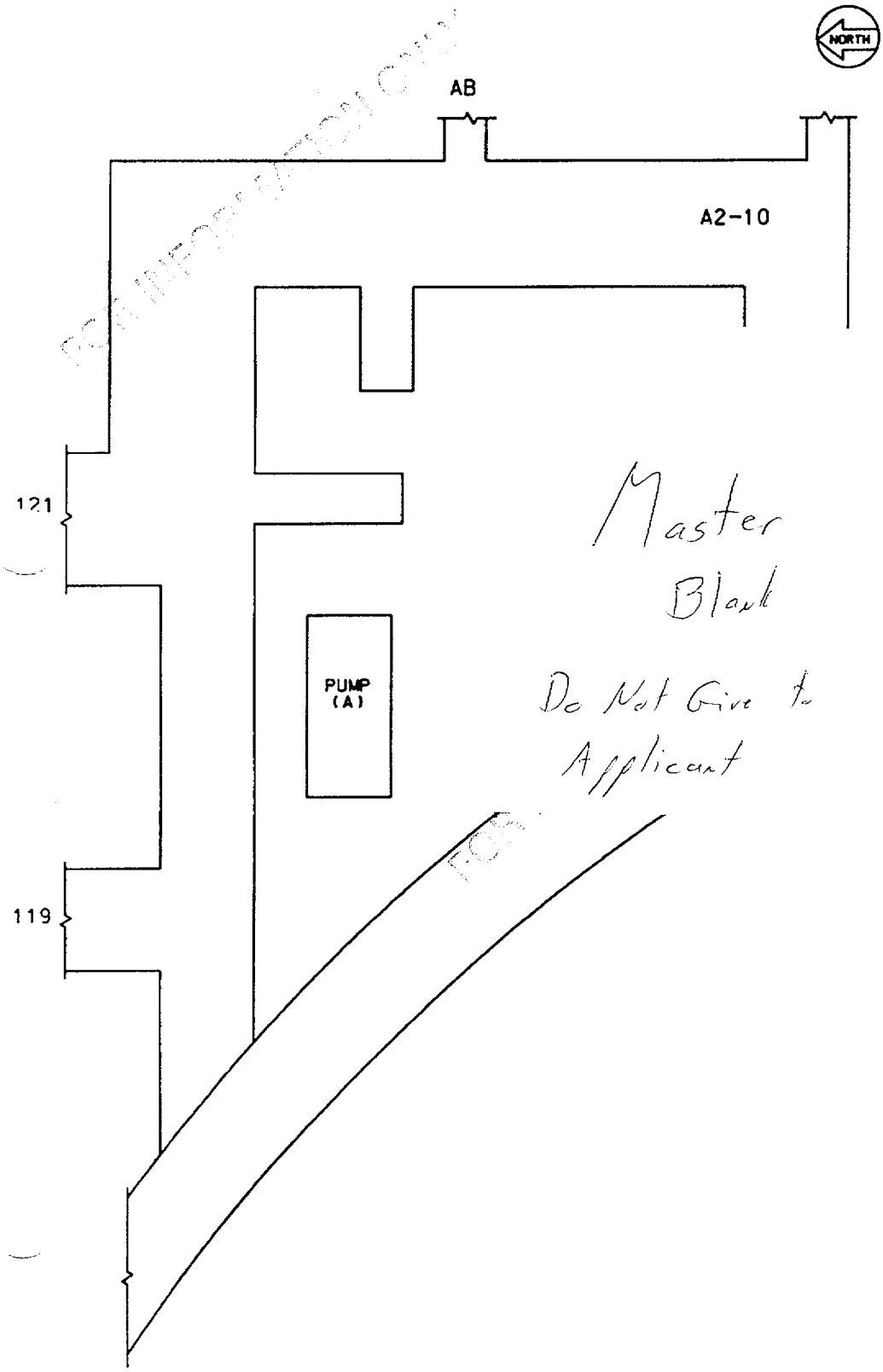
Performed By: _____

Counted By: _____

Reviewed By: _____ Date: _____

	RADIATION	CONTAMINATION
Inst. Type		
Serial #		
Cal Due Date		

Rx Power _____ Bkgd. _____(cpm)



Smear/Location		Smear/Location	
No	dpm/100cm²	No	/

Remarks:

MRRR/RWP: _____

Tech Dose Received: _____ mR

Notes: Gross Masslinn (~100 ft²)

1. Gen. Area Dose Rates in mRem/hr.
2. *# / # = Contact/30cm Dose Rates
3. Smears Taken at Circled Locations
4. X X = Radiological Boundary
5. RCA = Radiological Control Area
6. CA = Contaminated Area
7. HCA = High Contamination Area
8. RA = Radiation Area
9. HRA = High Radiation Area
10. RHRA= Restricted High Radiation Area
11. T = Transfer Area
12. CAB = Clean Area Boundary

RP-1125-03
9/25/98

CPS RADIOLOGICAL SURVEY SHEET

Aux. Building - 737'EL.

Reactor Water Cleanup Pump (A)

Survey Index No: ~~99~~ 04-07-06

Date: 4-7-00 Time: 1030

Type: ☑ RWP ☐ Other:

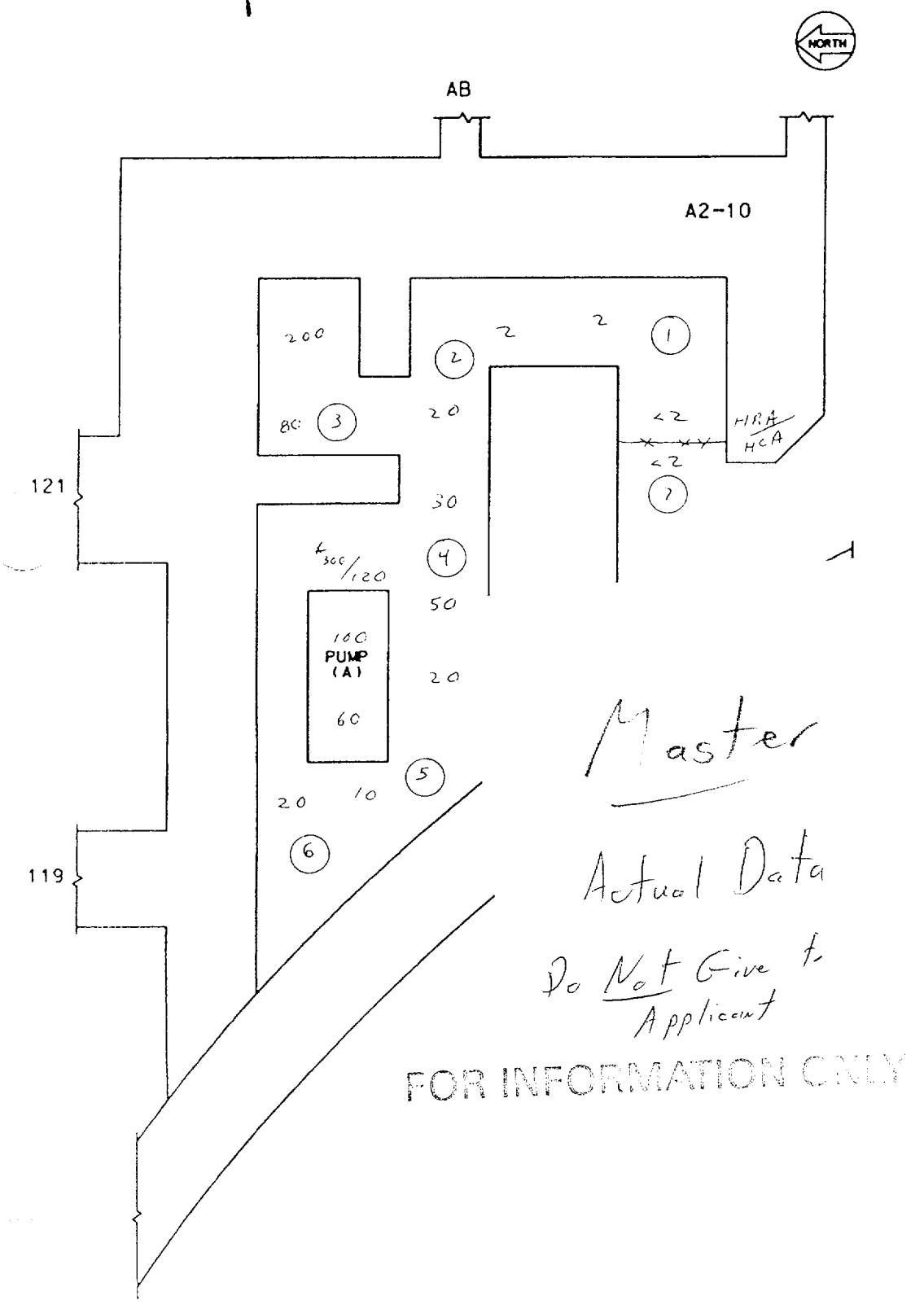
Performed By: R W Green

Counted By: R W Green

Reviewed By: [signature] Date: 4/8/00

	RADIATION	CONTAMINATION
Inst. Type	Bo2A	RM20
Serial #	3313	1192
Cal Due Date	9-30-00	4-30-00

Rx Power 100% Bkgd. 80 (cpm)



Smear/Location No	dpm/100cm²	Smear/Location No	
1	7K		
2	10K		
3	15K		
4	25K		
5	25K		
6	25K		
7	<1K		

N A

N A

Master

Actual Data

Do Not Give to Applicant

FOR INFORMATION ONLY

Remarks:

MRRR/RWP: 20001014

4 ly vibration monitoring

Tech Dose Received: 1.0 mR

Notes: Gross Massline (~100 ft)

1 Gen. Area Dose Rates in mRem/hr
2 * # / # = Contact/30cm Dose Rates
3 Smears Taken at Circled Locations
4 X X = Radiological Boundary
5 RCA = Radiological Control Area
6 CA = Contaminated Area
7 HCA = High Contamination Area
8 RA = Radiation Area
9 HRA = High Radiation Area
10 RHRA = Restricted High Radiation Area
11 T = Transfer Area
12 CAB = Clean Area Boundary

Admin. JPM Worksheet RO A.4 Emergency Plan Notification

Facility: Clinton Task No: 045200C511

Task Title: Make Emergency Plan Notification to the Illinois Emergency Management Agency - Alternate path

Job Performance Measure No: New K/A Reference: G 2.4.43

Examinee: _____ NRC Examiner: _____

Facility Evaluator: _____ Date: _____

Method of testing:

Simulated Performance X Actual Performance _____

Classroom _____ Simulator X Plant _____

READ TO THE EXAMINEE
I will explain the initial conditions, which steps to simulate or discuss, and provide initiating cues. When you complete the task successfully, the objective for this job performance measure will be satisfied.

Initial Conditions: A condition exists where a Notification of Unusual Event has been declared.

Task Standard:
Applicant has simulated notifying the Illinois Emergency Management Agency by alternate communications and making the NARS form report within 15 minutes of declaring the NOUE.

Required Materials: Completed NARS worksheet

General References:
EC-07 Emergency Plan Notification and attachments

Initiating Cue:
A condition exists where a Notification of Unusual Event is declared. The Nuclear Accident Reporting System Form is filled out and it is ready for being reported to offsite agencies. Make the report to Off-site agencies per EC-07. The time and date entry for item # 4 are the CURRENT time and date. Examiner will provide Applicant with a copy of the completed NARS form.

Time Critical Task: YES

Validation Time: 15 minutes

Start Time: _____

Copy for Examiner

(UTILITY FORM)

UTILITY MESSAGE NO. 01

STATE OF ILLINOIS
NUCLEAR ACCIDENT REPORTING SYSTEM FORM
AUGUST 1994

STATE MESSAGE NO. _____

STATUS
[A] ACTUAL
(B) EXERCISE
[C] DRILL
[D] TERMINATION

2. STATION
[A] DRESDEN
[B] LASALLE
[C] QUAD CITIES
[D] ZION
[E] BYRON
[F] BRAIDWOOD
(G) CLINTON

3. ON-SITE ACCIDENT CLASSIFICATION
(A) UNUSUAL EVENT
[B] ALERT
[C] SITE AREA EMERGENCY
[D] GENERAL EMERGENCY
[E] RECOVERY
[F] NOT APPLICABLE

4. ACCIDENT CLASSIFIED
TIME: _____
DATE: _____
EAL#: 10.1

ACCIDENT TERMINATED
TIME: NA
DATE: NA

5. RELEASE TO ENVIRONMENT
(A) NONE
[B] POTENTIAL
[C] OCCURRING
[D] TERMINATED

6. TYPE OF RELEASE
(A) NOT APPLICABLE
[B] RADIOACTIVE GAS
[C] RADIOACTIVE LIQUID

7. WIND DIRECTION:
FROM 265 (DEGREES)
DOWNWIND SECTOR: E

8. WIND SPEED (COMPLETE ONE OF THE FOLLOWING:)
[A] METERS/SEC.: NA
[B] MILES/HR.: 5

9. RECOMMENDED ACTIONS
(A) NONE
[B] PREPARE FOR POSSIBLE ACTION INVOLVING THE PUBLIC
[C] INITIATE PUBLIC NOTIFICATION PROCEDURES
INSTRUCT THE PUBLIC TO TAKE THE FOLLOWING ACTIONS:

SHELTER	EVACUATE		UTILITY ONLY
[D]	[H]	0 - 2	MILE RADIUS
[E]	[I]	0 - __	MILE RADIUS
[F]	[J]	2 - 5	MILES FOR SECTORS_____
[G]	[K]	5 - 10	MILES FOR SECTORS_____

[L] SHELTER SUB-AREAS: _____ (STATE USE ONLY)
[M] EVACUATE SUB-AREAS: _____ (STATE USE ONLY)

[N] RECOMMEND POTASSIUM IODIDE (KI) IN ACCORDANCE WITH PROCEDURES (STATE USE ONLY)
[O] CONFINE MILK-PRODUCING ANIMALS ON STORED FEED AND PROTECTED WATER OUT TO _____ MILE RADIUS (STATE USE ONLY)
[P] COMMENCE RETURN OF PUBLIC (STATE USE ONLY)

[Q] OTHER _____

10. ADDITIONAL INFORMATION: A fire developed in an onsite (Protected area) Trailer building lasting longer than 10 minutes. Off-site fire assistance was called and utilized. Fire is out no injuries.

11. MESSAGE TRANSMITTED BY:
_____ (NAME)
Operations (ORGANIZATION)
935-9812 (OUTSIDE PHONE NUMBER)

12. MESSAGE TRANSMITTED:
CURRENT TIME: _____
CURRENT DATE: _____

13. MESSAGE RECEIVED BY:
_____ (NAME)
_____ (ORGANIZATION)

UTILITY USE ONLY
APPROVED BY: _____ (INITIALS)
_____ (TIME)

OUTSIDE PHONE NUMBERS		INITIAL ROLL CALL	FINAL ROLL CALL
IEMA	217-782-7860	☐	☐
IDNS	217-785-0600	☐	☐
DeWitt Co. ESDA	217-935-9596	☐	☐
DeWitt Co. Sheriff	217-935-3196	☐	☐

N104-56 (08-94)

PERFORMANCE INFORMATION

_____ Performance step: (Denote critical steps with an asterisk)

Step 1: Notify the Illinois Emergency Management Agency (IEMA) and the Illinois Department of Nuclear Safety (IDNS) Dispatcher. Use the Green NARS phone and dial 98.

Standard: Applicant simulates picking up the Green NARS phone and dialing 98.

Cue: Just prior to the applicant picking up the GREEN NARS PHONE inform the Applicant there is no response from the green NARS phone from IEMA/IDNS

Comment:

SAT_____UNSAT_____

*____ Performance step: (Denote critical steps with an asterisk)

Step 2: Applicant simulates dialing one of the following commercial telephone numbers:

1-800-782-7860 (IEMA) **OR**
1-217-782-7860

Standard: Within 15 minutes of declaring the NOUE, the Applicant will state the location of a telephone (near the Control Room) that has an outside line AND simulate dialing one of the commercial numbers.

Notes to Examiner:

1. Step 2 is Time Critical
2. The licensee's phone system requires dialing 9 to reach an outside commercial line.

SAT_____ UNSAT_____

_____ * Performance step: (Denote critical steps with an asterisk)
Step 3: Report NARS form data (refer to Attachment 4)

Standard: Applicant transmits data from the NARS form. Must report #2, #3 (Critical).

Cue: Repeat back information from NARS form.

Note to Examiner: Use the copy of the NARS form to follow the report.

SAT_____UNSAT_____

_____ Performance step: (Denote critical steps with an asterisk)
Step 4 Applicant requests IEMA to relay NARS information to IDNS.

Standard: Applicant requests IEMA to relay NARS information to IDNS.

Cue: Responds as the IEMA Dispatcher that the NARS information will be relayed to IDNS.

Comment:

SAT_____ UNSAT _____

_____ Performance step: (Denote critical steps with an asterisk)
Step 5: The MCR direct line phone number should be given to IEMA for callback verification.

Standard: Applicant provides IEMA Dispatcher the outside phone number on the NARS form.

CUE: Repeat back outside phone number on the NARS form.

Note to Examiner: This is Item # 11 on the NARS form.

SAT_____ UNSAT _____

_____ Performance step: (Denote critical steps with an asterisk)

Step 6: Complete Items # 11, 12, and 13 on the NARS form.

Standard: Applicant fills in Items # 11, 12, and 13 on the NARS form.

Cue: For Item 13, use John Smith for the name and IEMA for the organization.

Terminating cue:
Applicant has simulated contacting the IEMA Dispatcher and making the NARS form report within 15 minutes of declaring the NOUE.

Stop Time:_____

VERIFICATION OF COMPLETION

Job Performance Measure No. _____

Examinee's Name:

Examiner's Name:

Date performed:

Facility Evaluator:

Number of attempts:

Time to complete:

Question Documentation:

Question:_____
_____
_____

Response:_____
_____
_____
_____

Result: SAT or UNSAT

Examiner's signature and date: _____ _____

Admin. JPM Worksheet RO A.4

APPLICANTS COPY

Initial Conditions:
A condition exists where a Notification of Unusual Event has been declared.

Initiating Cue:
A condition exists where a Notification of Unusual Event is declared. The Nuclear Accident Reporting System Form is filled out and it is ready for being reported to offsite agencies. Make the report to Off-site agencies per EC-07. The time and date entry for item # 4 are the CURRENT time and date. Examiner will provide Applicant with a copy of the completed NARS form.

(UTILITY FORM) Copy for Applicant

UTILITY MESSAGE NO. 01

STATE OF ILLINOIS

STATE MESSAGE NO. _____

NUCLEAR ACCIDENT REPORTING SYSTEM FORM

AUGUST 1994

STATUS
[A] ACTUAL
(B) EXERCISE
[C] DRILL
[D] TERMINATION

2. STATION
[A] DRESDEN
[B] LASALLE
[C] QUAD CITIES
[D] ZION
[E] BYRON
[F] BRAIDWOOD
(G) CLINTON

3. ON-SITE ACCIDENT CLASSIFICATION
(A) UNUSUAL EVENT
[B] ALERT
[C] SITE AREA EMERGENCY
[D] GENERAL EMERGENCY
[E] RECOVERY
[F] NOT APPLICABLE

4. ACCIDENT CLASSIFIED
TIME: _____
DATE: _____
EAL#: 10.1

ACCIDENT TERMINATED
TIME: NA
DATE: NA

5. RELEASE TO ENVIRONMENT
(A) NONE
[B] POTENTIAL
[C] OCCURRING
[D] TERMINATED

6. TYPE OF RELEASE
(A) NOT APPLICABLE
[B] RADIOACTIVE GAS
[C] RADIOACTIVE LIQUID

7. WIND DIRECTION:
FROM 265 (DEGREES)
DOWNWIND SECTOR: E

8. WIND SPEED (COMPLETE ONE OF THE FOLLOWING:)
[A] METERS/SEC.: NA
[B] MILES/HR.: 5

9. RECOMMENDED ACTIONS
(A) NONE
[B] PREPARE FOR POSSIBLE ACTION INVOLVING THE PUBLIC
[C] INITIATE PUBLIC NOTIFICATION PROCEDURES
INSTRUCT THE PUBLIC TO TAKE THE FOLLOWING ACTIONS:

SHELTER	EVACUATE		UTILITY ONLY
[D]	[H]	0 - 2	MILE RADIUS
[E]	[I]	0 - __	MILE RADIUS
[F]	[J]	2 - 5	MILES FOR SECTORS_____
[G]	[K]	5 - 10	MILES FOR SECTORS_____

[L] SHELTER SUB-AREAS: _____ (STATE USE ONLY)
[M] EVACUATE SUB-AREAS: _____ (STATE USE ONLY)

[N] RECOMMEND POTASSIUM IODIDE (KI) IN ACCORDANCE WITH PROCEDURES (STATE USE ONLY)
[O] CONFINE MILK-PRODUCING ANIMALS ON STORED FEED AND PROTECTED WATER OUT TO _____ MILE RADIUS (STATE USE ONLY)
[P] COMMENCE RETURN OF PUBLIC (STATE USE ONLY)

[Q] OTHER _____

10. ADDITIONAL INFORMATION: A fire developed in an onsite (Protected area) Trailer building lasting longer than 10 minutes. Off-site fire assistance was called and utilized. Fire is out no injuries.

11. MESSAGE TRANSMITTED BY:
_____ (NAME)
Operations (ORGANIZATION)
935-9812 (OUTSIDE PHONE NUMBER)

12. MESSAGE TRANSMITTED:
CURRENT TIME: _____
CURRENT DATE: _____

13. MESSAGE RECEIVED BY:
_____ (NAME)
_____ (ORGANIZATION)

UTILITY USE ONLY

APPROVED BY: _____ (INITIALS)
_____ (TIME)

OUTSIDE PHONE NUMBERS

		INITIAL ROLL CALL	FINAL ROLL CALL
IEMA	217-782-7860	☐	☐
IDNS	217-785-0600	☐	☐
DeWitt Co. ESDA	217-935-9596	☐	☐
DeWitt Co. Sheriff	217-935-3196	☐	☐

N104-56 (08-94)

(UTILITY FORM)

UTILITY MESSAGE NO. 01

STATE OF ILLINOIS
NUCLEAR ACCIDENT REPORTING SYSTEM FORM
AUGUST 1994

STATE MESSAGE NO. _____

STATUS
[A] ACTUAL
[B] EXERCISE
[C] DRILL
[D] TERMINATION

2. STATION
[A] DRESDEN
[B] LASALLE
[C] QUAD CITIES
[D] ZION
[E] BYRON
[F] BRAIDWOOD
[G] CLINTON

3. ON-SITE ACCIDENT CLASSIFICATION
[A] UNUSUAL EVENT
[B] ALERT
[C] SITE AREA EMERGENCY
[D] GENERAL EMERGENCY
[E] RECOVERY
[F] NOT APPLICABLE

4. ACCIDENT CLASSIFIED
TIME: _____
DATE: _____
EAL#: 10.1

ACCIDENT TERMINATED
TIME: NA
DATE: NA

5. RELEASE TO ENVIRONMENT
[A] NONE
[B] POTENTIAL
[C] OCCURRING
[D] TERMINATED

6. TYPE OF RELEASE
[A] NOT APPLICABLE
[B] RADIOACTIVE GAS
[C] RADIOACTIVE LIQUID

7. WIND DIRECTION:
FROM 265 (DEGREES)
DOWNWIND SECTOR: E

8. WIND SPEED (COMPLETE ONE OF THE FOLLOWING:)
[A] METERS/SEC.: NA
[B] MILES/HR.: 5

9. RECOMMENDED ACTIONS
[A] NONE
[B] PREPARE FOR POSSIBLE ACTION INVOLVING THE PUBLIC
[C] INITIATE PUBLIC NOTIFICATION PROCEDURES
INSTRUCT THE PUBLIC TO TAKE THE FOLLOWING ACTIONS:

SHELTER	EVACUATE		UTILITY ONLY
[D]	[H]	0 - 2	MILE RADIUS
[E]	[I]	0 - __	MILE RADIUS
[F]	[J]	2 - 5	MILES FOR SECTORS_____
[G]	[K]	5 - 10	MILES FOR SECTORS_____

[L] SHELTER SUB-AREAS: _____ (STATE USE ONLY)
[M] EVACUATE SUB-AREAS: _____ (STATE USE ONLY)

[N] RECOMMEND POTASSIUM IODIDE (KI) IN ACCORDANCE WITH PROCEDURES (STATE USE ONLY)
[O] CONFINE MILK-PRODUCING ANIMALS ON STORED FEED AND PROTECTED WATER OUT TO _____ MILE RADIUS (STATE USE ONLY)
[P] COMMENCE RETURN OF PUBLIC (STATE USE ONLY)

[Q] OTHER _____

10. ADDITIONAL INFORMATION: A fire developed in an onsite (Protected area) Trailer building lasting longer than 10 minutes. Off-site fire assistance was called and utilized. Fire is out No injuries.

11. MESSAGE TRANSMITTED BY:
_____ (NAME)
Operations (ORGANIZATION)
935-9812 (OUTSIDE PHONE NUMBER)

12. MESSAGE TRANSMITTED:
CURRENT TIME: _____
CURRENT DATE: _____

13. MESSAGE RECEIVED BY:
_____ (NAME)
_____ (ORGANIZATION)

UTILITY USE ONLY
APPROVED BY: _____ (INITIALS)
_____ (TIME)

OUTSIDE PHONE NUMBERS

		INITIAL ROLL CALL	FINAL ROLL CALL
IEMA	217-782-7860	☐	☐
IDNS	217-785-0600	☐	☐
DeWitt Co. ESDA	217-935-9596	☐	☐
DeWitt Co. Sheriff	217-935-3196	☐	☐

N104-56 (08-94)

STATE OF ILLINOIS
NARS FORM

INSTRUCTIONS FOR USE
(UTILITY FORM)

Complete the NARS as follows:

UTILITY MESSAGE NUMBER - For use by Utility personnel only. Number Messages sequentially, starting with 1, for the Event described. Enter "N/A" if this is a State NARS.

STATE MESSAGE NUMBER - Enter State Message Number when receiving a NARS message from the State. Enter "N/A" if this is a Utility NARS.

1. STATUS - Check the letter corresponding to the appropriate status description.

2. STATION - Check the letter corresponding to the affected Station.

3. ON-SITE ACCIDENT CLASSIFICATION - Check the letter corresponding to the classification issued by the Utility.

4. ACCIDENT CLASSIFIED - Fill in the time and date at which the most recent accident classification was determined by the Utility. Also fill in the applicable On-Site Emergency Action Level (EAL) code number. Enter "N/A" if this is an accident termination message.

   ACCIDENT TERMINATED - Fill in the time and date of the accident termination, if applicable. Enter "N/A" if this is an accident classified message.

5. RELEASE TO ENVIRONMENT - Check the letter corresponding to the appropriate description.

6. TYPE OF RELEASE - Check the letter corresponding to the appropriate release type.

7. WIND DIRECTION - Fill in the direction from which the wind is coming, in degrees.

   DOWNWIND SECTOR - Fill in the letter corresponding to the Downwind Sector. Use environmental sampling maps or the following table.

DOWNWIND SECTOR	WIND FROM		WIND FROM DEGREES	DOWNWIND SECTOR	WIND FROM		WIND FROM DEGREES
J	N	____	349-11	A	S	____	169-191
K	NNE	____	12-33	B	SSW	____	192-213
L	NE	____	34-56	C	SW	____	214-236
M	ENE	____	57-78	D	WSW	____	237-258
N	E	____	79-101	E	W	____	259-281
P	ESE	____	102-123	F	WNW	____	282-303
Q	SE	____	124-146	G	NW	____	304-326
R	SSE	____	147-168	H	NNW	____	327-348

8. WIND SPEED - Fill in the wind speed under meters/second or miles/hour.

9. RECOMMENDED ACTIONS - Check the letter corresponding to the appropriate protective action. Add additional information if [C] is chosen. If recommending shelter or evacuation for letters [F][G][J] or [K], provide the center line sector and at least one sector on each side of center line. Letters [L-P] are for State use only.

10. ADDITIONAL INFORMATION - Provide additional information that will be helpful to personnel evaluating the event (e.g. Unit Number).

11. MESSAGE TRANSMITTED BY - Fill in name, organization and outside phone number of person transmitting the NARS Form information.

12. MESSAGE TRANSMITTED - Fill in the current time and date that the message was transmitted by the person listed in step 11.

13. MESSAGE RECEIVED BY - Fill in name and organization of person receiving the NARS message and filling out the NARS Form.

Admin JPM Worksheet SRO A.1.a

Core Thermal Limits

Facility: Clinton

Task No: 011298C524

Task Title: Interpret Core Thermal Limits

Job Performance Measure No: NEW

K/A Reference: 2.1.25

Examinee: _____

NRC Examiner: _____

Facility Evaluator: _____

Date: _____

Method of testing:

Simulated Performance _____

Actual Performance _____

Classroom X

Simulator _____

Plant _____

READ TO THE EXAMINEE

I will explain the initial conditions, which steps to simulate or discuss, and provide initiating cues. When you complete the task successfully, the objective for this job performance measure will be satisfied.

Initial Conditions:
The plant is in a normal 100% power lineup

Task Standard:
All Core Thermal Limit violations have been identified.

Required Materials:
3D Monicore Periodic Log

General References:
CPS 9820.01 Power Distribution Limits, Step 8.0, Procedure

Initiating Cue:
You are an extra SRO on shift. The CRS has directed you to review a 3D Monicore Periodic Log. Examiner provides Applicant with a copy of the 3D Monicore Periodic Log.

Time Critical Task: NO

Validation Time: 15 minutes

Start Time: _____

PERFORMANCE INFORMATION

_____ Performance step:

Step 1: Determine the highest MFLCPR value.

Standard:

Applicant determines the highest MFLCPR value is ≤ 1.0.

Comment:

SAT_____ UNSAT_____

_____ Performance step:

Step 2: Determine the highest MFLPD value.

Standard:

Applicant determines the highest MFLPD value is ≤ 1.0.

Comment:

SAT_____ UNSAT_____

____*____ Performance step:

Step 3: Determine the highest MAPRAT value.

Standard:

Applicant determines the highest MAPRAT value is out of specification.
Indicated value is 1.001

Comment:

SAT_____ UNSAT_____

Terminating cue:

MAPRAT greater than 1.000 has been reported to the CRS.

Stop Time:_____

VERIFICATION OF COMPLETION

Job Performance Measure No. _____

Examinee's Name:

Examiner's Name:

Date performed:

Facility Evaluator:

Number of attempts:

Time to complete:

Question Documentation:

Question:_____

_____

_____

Response:_____

_____

_____

_____

Result: SAT or UNSAT

Examiner's signature and date: _____ _____

APPLICANTS COPY

Initial Conditions:
The plant is in a normal 100% power lineup

Initiating Cue:
You are an extra SRO on shift. The CRS has directed you to review a 3D Monicore Periodic Log. Examiner provides Applicant with a copy of the 3D Monicore Periodic Log.

Facility: Clinton Task No: _____

Task Title: Determine if Core Alterations Can Continue Based on SRM Indications.

Job Performance Measure No: NEW K/A Reference: G 2.1.7

Applicability: RO_____ SRO_X__

Examinee: _____ NRC Examiner: _____

Facility Evaluator: _____ Date: _____

Method of testing:

Simulated Performance _____ Actual Performance __X_____

Classroom _____X_____ Simulator _____ Plant _____

READ TO THE EXAMINEE
I will explain the initial conditions, which steps to simulate or discuss, and provide initiating cues. When you complete the task successfully, the objective for this job performance measure will be satisfied.

Initial Conditions:
You are the oncoming Control Room Supervisor (CRS) during refueling. All surveillances are current. Refueling operations are on hold for the control room turnover. During your panel walkdowns, you observe the following SRM indications:

SRM-A 3 cps; SRM-B 2 cps; SRM-C 5 cps; SRM-D Inop for Testing

Task Standard: Applicant determines that core alterations may can NOT continue. Applicant identifies reference(s) that support the decision to halt core alterations. Applicant explains basis to halt core alterations.

Required Materials: TS 3.3.1.2 and /or CPS 3703.01, Core Alterations, Section 6.10.

General References:

Initiating Cue: The next fuel bundle is to be inserted in cell 17-48. Determine if you would approve or disapprove the next planned fuel move. Identify any references that support your decision and explain your decision. The Examiner will provide the Applicant with a copy of the core map.

Time Critical Task: ~~YES~~ / NO

Validation Time: 15 minutes.

Simulator Set-up Conditions: None. Admin JPM

Start Time: _____

PERFORMANCE INFORMATION

_____ Performance step: (Denote critical steps with an asterisk)
Step 1: Applicant obtains CPS 3703.01, Core Alterations, OR
Applicant obtains Technical Specifications.

STANDARD: Applicant obtains CPS 3703.01, Core Alterations, OR
Applicant obtains Technical Specifications.

SAT _____ UNSAT _____

__*_____ Performance step: (Denote critical steps with an asterisk)
Step 2: Applicant reviews CPS 3703.01, Step 6.10 OR TS 3.3.1.2 and determines that core alterations can NOT continue.

STANDARD: Applicant determines that core alterations can NOT continue.

CUE: If the Applicant asks about a spiral reload, the Examiner will indicate that a spiral reload is NOT being performed.

NOTE: The information about spiral reload is identified in TS 3.3.1.2, Table 3.3.1.2-1, Note (b).

SAT _____ UNSAT _____

__*_____	Performance step: (Denote critical steps with an asterisk)
Step 3	Applicant provides CPS 3703.01, Step 6.10 OR TS 3.3.1.2 as the references that support the decision to continue core alterations.
STANDARD:	Applicant provides CPS 3703.01, Step 6.10 OR TS 3.3.1.2 as the references that support the decision to continue core alterations.

NOTE for Examiner:

- Since SRM-B is < 3cps, it is inoperable.
- TS and CPS 3703.01 require suspending core alterations if (1) the inoperable SRM is in a quadrant where core alterations are being performed, OR (2) both SRMs are inoperable in the adjacent quadrant to the quadrants where the core alterations are being performed.
- Since SRM-B and SRM-D are inoperable, can not continue with core alterations.

Terminating Cue:
Applicant informs Examiner that core alterations can NOT continue.

Stop Time: _____

VERIFICATION OF COMPLETION

Job Performance Measure No. _____

Examinee's Name:

Examiner's Name:

Date performed:

Facility Evaluator:

Number of attempts:

Time to complete:

Question Documentation:

Question:_____

_____

_____

_____

Response:_____

_____

_____

_____

_____

Result: SAT or UNSAT

Examiner's signature and date: _____ _____

APPLICANT'S COPY

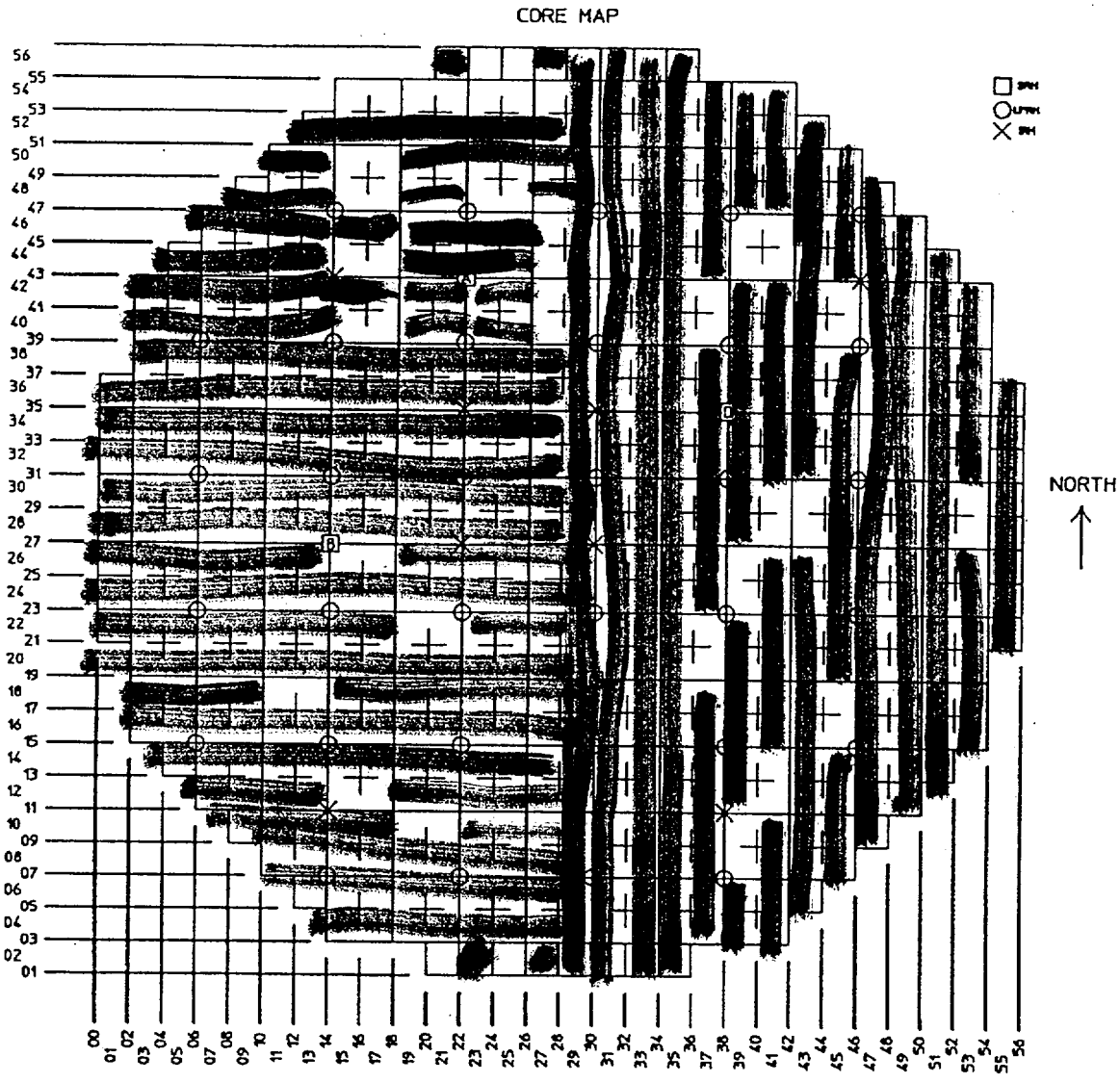
Initial Conditions:
You are the oncoming Control Room Supervisor (CRS) during refueling. All surveillances are current. Refueling operations are on hold for the control room turnover. During your panel walkdowns, you observe the following SRM indications:

SRM-A 3 cps;	SRM-B 2 cps;	SRM-C 5 cps;	SRM-D Inop for Testing

Initiating Cue: The next fuel bundle is to be inserted in cell 17-48. Determine if you would approve or disapprove the next planned fuel move. Identify any references that support your decision and explain your decision. The Examiner will provide the Applicant with a copy of the core map.

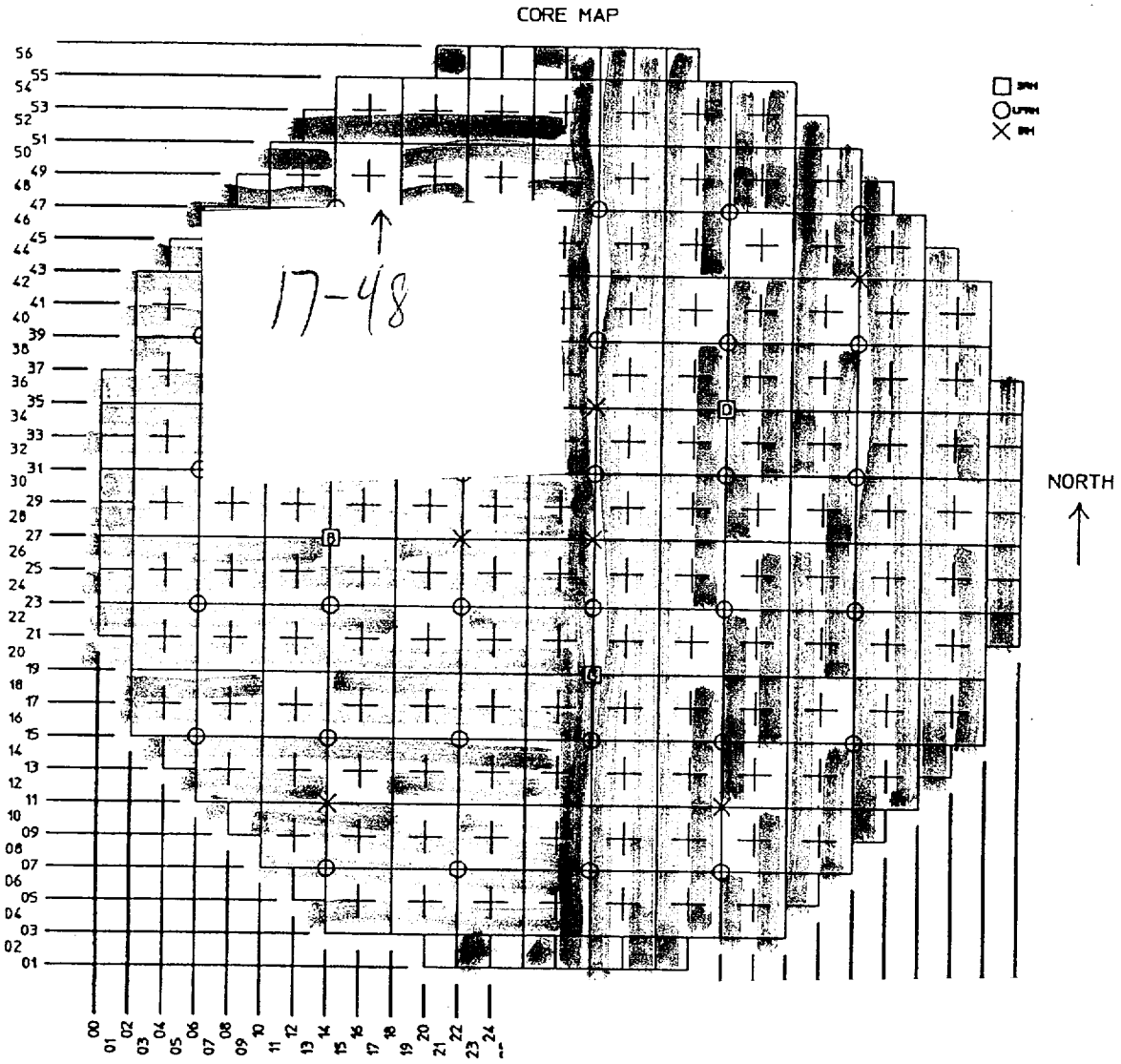
CORE MAP

Clinton Unit 1



CORE MAP

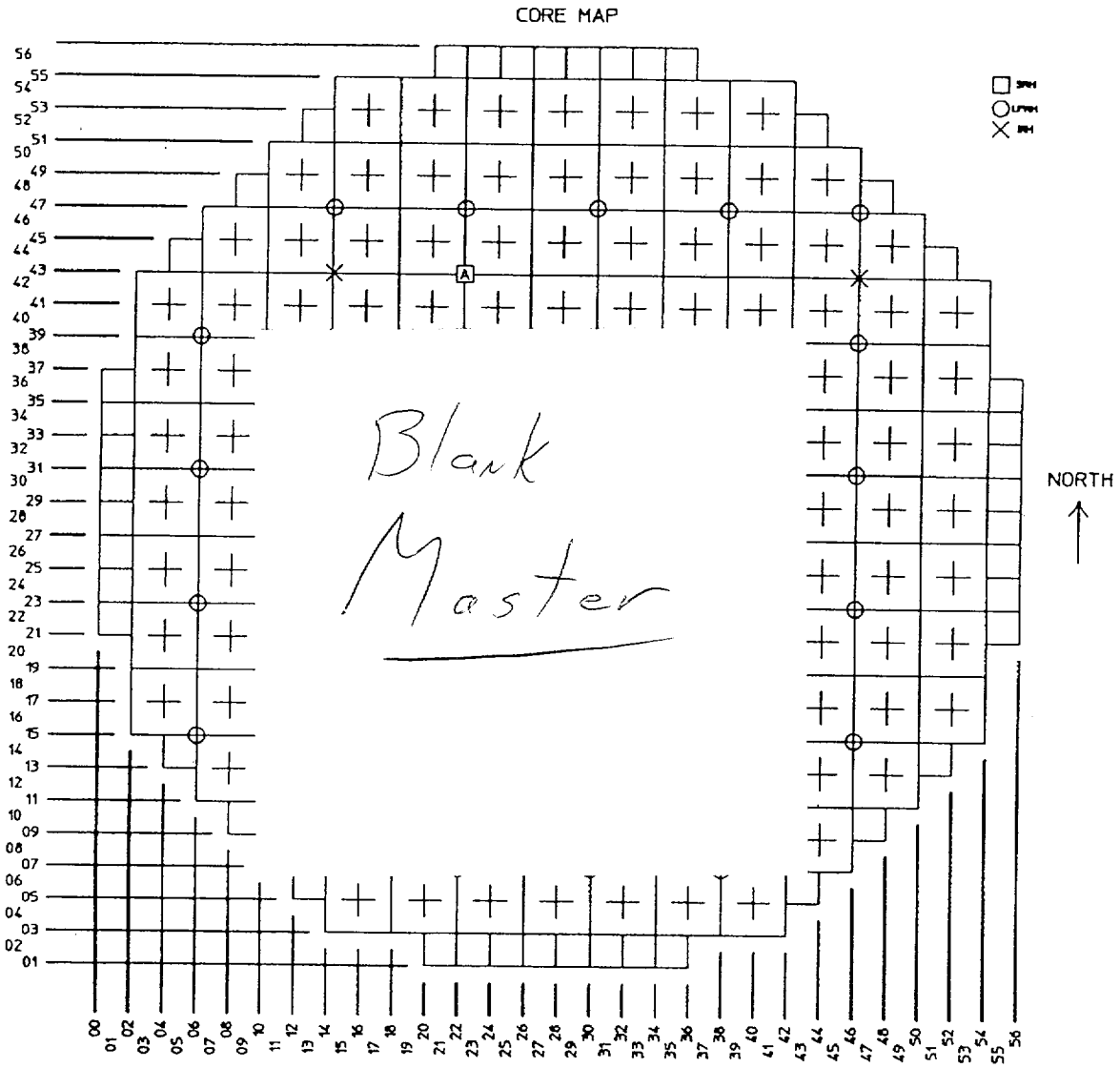
Clinton Unit 1



Master

CORE MAP

Clinton Unit 1



Admin JPM Worksheet SRO A.2 Review A-RWCU Pump Tagout

Facility: Clinton Task No: _____

Task Title: Review A- RWCU Pump Tagout (One Valve Not Identified)

Job Performance Measure No: 035299J001 K/A Reference: G 2.2.13

Applicability: RO____ SRO_X___

Examinee: _____ NRC Examiner: _____

Facility Evaluator: _____ Date: _____

Method of testing:

Simulated Performance _____ Actual Performance __X_____

Classroom ____X_____ Simulator _____ Plant (OSC) __X____

READ TO THE EXAMINEE
I will explain the initial conditions, which steps to simulate or discuss, and provide initiating cues. When you complete the task successfully, the objective for this job performance measure will be satisfied.

Initial Conditions: A leak in the A-RWCU pump mechanical seal was identified last shift. The pump has been secured. A tagout for the pump (mechanical) has been developed.

Task Standard: Applicant correctly identifies that the isolation valve for the 3/4 inch bypass line for the A-RWCU pump was not on identified on the tagout sheet. The Applicant also correctly determines that the isolation valves on the tagout sheet were correctly identified and were in the correct position. The Applicant will point out the valves and their positions to the Examiner on P&IDs.

Required Materials: Tagout Sheet for A-RWCU pump mechanical seal.
P&IDs for RWCU, Aux Bldg Floor Drains, & CCW.

General References: CPS 1014.01, Safety Tagging

Initiating Cue: You are an extra SRO on-shift. You are directed to perform the technical review for the A-RWCU pump mechanical seal per step 8.3.2, CPS 1014.01, Safety Tagging. If the tagout is adequate, identify the valve(s) and its/their position(s) that supports you conclusion. If there are any errors, identify the error(s) and identify the correction. Use P&IDs to identify the valves and their positions. The Examiner will provide the Applicant with a copy of the tagout for review.

Time Critical Task: ~~YES~~ / NO Validation Time: 20 Min.

Simulator Set-up Conditions: None.

Start Time: _____

PERFORMANCE INFORMATION

_____ Performance step: (Denote critical steps with an asterisk)

Step 1: Applicant obtains P&IDs for RWCU (MO5-1076), CCW (MO5-1032), and Vents & Drains (MO5-1047).

STANDARD: Applicant obtains P&IDs for RWCU (RT), Aux Bldg Floor Drains (RF), & CCW (CC).

SAT _____ UNSAT _____

___*____ Performance step: (Denote critical steps with an asterisk)

Step 2: Applicant reviews the tagout sheet and determines that 1G33-FO45A, RWCU Pump-A Discharge Orifice Isolation was not included on the tagout sheet. The Applicant indicates that the valve should be SHUT.

STANDARD: Applicant correctly determines that the isolation valve for the 3/4 inch bypass line for the A-RWCU pump, 1G33-FO45A, RWCU Pump-A Discharge Orifice Isolation, was NOT on identified on the tagout sheet. The Applicant indicates that the valve should be SHUT. The Applicant uses P&IDs to identify the valve and its position.

CUE: If the Applicant does not mention the valves identified on the tagout sheet, the Examiner will ask about the valves and their positions identified on the sheet.

SAT _____ UNSAT _____

___*_____ Performance step: (Denote critical steps with an asterisk)

Step 3: Applicant reviews the tagout sheet and determines that the valves listed on tagout sheet were needed to tagout the A-RWCU pump to replace the mechanical seal and were in the correct position.

STANDARD:
The isolation valves on the tagout sheet were correctly identified and in there correct position.
The Applicant uses P&IDs to identify the valves and their positions.
RWCU (1G33) valves:

1G33-FO43A, RWCU Pump-A Suction Isolation. (SHUT) **(Critical)**
-FO05A, RWCU Pump-A Suction Isolation. (SHUT) **(Critical)**
-FO13A, RWCU Pump-A Discharge Isolation. (SHUT) **(Critical)**
-F308A, RWCU Pump-A Suction Header Drain Isolation. (OPEN) **(Critical)**
-F309A, RWCU Pump-A Suction Header Drain Isolation. (OPEN) **(Critical)**
-F010A, RWCU Pump-A Vent Isolation. (OPEN) **(Critical)**
-F011A, RWCU Pump-A Vent Isolation. (OPEN) **(Critical)**
-F008A, RWCU Pump-A Drain Isolation. (OPEN) **(Critical)**
-F009A, RWCU Pump-A Drain Isolation. (OPEN) **(Critical)**

Component Cooling Water (1CC) valves:

1CC-1CC045A, RWCU Pump-A Seal Cooler Inlet Isolation. (SHUT) (Non-Critical)
-1CC046A, RWCU Pump-A Seal Cooler Outlet Isolation. (SHUT) (Non-Critical)

Note to Examiner:

The Applicant may identify three other valves that could be added to the tagout, but are NON-CRITICAL and according to the licensee, not necessary.

- 1G33-F404A, CY Fill Connection Isolation (SHUT) (Non-Critical)
- 1G33-F405A, CY Fill Connection Isolation (SHUT) (Non-Critical)
- 1G33-F611A, RWCU Pump-A Seal Cooler Vent Isolation (OPEN) (Non-Critical)

SAT _____ UNSAT _____

Terminating cue: Applicant determines that one valve, 1G33-FO45A, RWCU Pump-A Discharge Orifice Isolation, was missing on the tagout sheet. The valve should be SHUT. The remainder of the isolation valves were correctly identified and were in the correct position.

Stop Time: _____

VERIFICATION OF COMPLETION

Job Performance Measure No. _____

Examinee's Name:

Examiner's Name:

Date performed:

Facility Evaluator:

Number of attempts:

Time to complete:

Question Documentation:

Question:_____

_____

_____

_____

Response:_____

_____

_____

_____

_____

Result: SAT or UNSAT

Examiner's signature and date: _____ _____

APPLICANT'S COPY

Initial Conditions: A leak in the A-RWCU pump mechanical seal was identified last shift. The pump has been secured. A tagout for the pump (mechanical) has been developed.

Initiating Cue: You are an extra SRO on-shift. You are directed to perform the technical review for the A-RWCU pump mechanical seal per step 8.3.2, CPS 1014.01, Safety Tagging. If the tagout is adequate, identify the valve(s) and its/their position(s) that supports you conclusion. If there are any errors, identify the error(s) and identify the correction. Use P&IDs to identify the valves and their positions. The Examiner will provide the Applicant with a copy of the tagout for review.

Equipment ID:

1 -RT -1G33C001A -MP

Description / Special Inst:

THIS CLEARANCE SECTION IS FOR TRAINING PURPOSES ONLY!

This Clearance Section removes RT Pump A from service for pump seal replacement.
Ensure RT Pump "A" is S/D and vented in accordance with CPS 3303.01 prior to hanging Section.
References: M05-1076-004, M05-1047-007, M05-1032-002, M05-9076-001 & E02-1RT99-004.

Reason

See work document description.

Hazards

CC is isolated but not vent/drained as discussed with Mechanical Maintenance.
RT Pump "A" suction has double valve protection, discharge has only single valve protection. It the discharge valve leaks by the RT System will have to be shutdown and isolated.

Restoration Inst:

Ensure any TSR Package has been cleared prior to returning system to service.
Restoration position in accordance with 3203.01V001, 3303.01E001 & 3303.01V001

Attribute Description	Attribute Value
ITS, ORM or ODCM impacts.	No
Annunciator impacts.	None
Notify the following prior to hanging.	None

Number	Equipment ID	Description
FXXXXX REV. 00	1 -RT -1G33C001A -MP	Repair/replace pump seal.

Status	Description	User	Verification Date
Prepared	Prepared By	PINKERTON, JIM	05/24/2000 16:37
Technical Reviewed	Technical Reviewed By		00/00/0000 00:00
Tagging Authority Approval	Tagging Authority Approved By		00/00/0000 00:00
Hung	Hung By		00/00/0000 00:00
Verified Hung	Verified Hung By		00/00/0000 00:00
Drained / Vented or N/A	Drained/Vented or N/A		00/00/0000 00:00
Removal Prepared	Removal Prepared By		00/00/0000 00:00
Removal Approved	Removal Approved By		00/00/0000 00:00
Tags Removed	Tags Removed By		00/00/0000 00:00
Tags Verified Removed	Tags Verified Removed By		00/00/0000 00:00
Section Archived	Section Archived By		00/00/0000 00:00

Equipment ID	Equipment Description	Equipment Location	Tag Serial	Tag Type	Place. Config.	Place. Seq.	Rest. Config.	Rest. Seq.	Notes
1 -RT -1G33AS005A -IH	RWCU RECIRC PUMP A CONTROL SWITCH	CB - - -800-MCR -1H13-P680		Information	NOT DEPRESSED	1	STOP	3	Pump is DTO for seal replacement.
01-AP -1AP27E7A -E	RWCU RECIRCULATION PUMP 1A 1G33-C001A BREAKER	AB -S -117-762- -AB MCC 1D COMPT. 7A		Danger	OFF	2	ON	2	
1 -RT -1G33F043A -VGT	RWCU PUMP A SUCT ISOL	AB -800-121-750- -MEZZ		Danger	SHUT	3	SHUT	1	
1 -RT -1G33F005A -VGT	RWCU PUMP A SUCT ISOL	AB -AA -121-737- -RT A PUMP ROOM		Danger	SHUT	3	SHUT	1	
1 -RT -1G33F013A -VGT	RWCU PUMP A DISCH ISOL	AB -AA -121-750- -MEZZ		Danger	SHUT	3	SHUT	1	
1 -CC -1CC045A -VGB	RWCU PUMP 1A SEAL COOL INLT	AB -AA -118-737- -RT A PUMP ROOM		Danger	SHUT	3	OPEN	1	
1 -CC -1CC046A -VGB	RWCU PUMP 1A SEAL COOL OUTLT	AB -AA -118-737- -RT A PUMP ROOM		Danger	SHUT	3	OPEN	1	
1 -RT -1G33F308A -VGB	RWCU PUMP A SUCT HDR DRN	AB -AA -121-737- -RT A PUMP ROOM		Information	OPEN	4	SHUT	1	
1 -RT -1G33F309A -VGB	RWCU PUMP A SUCT HDR DRN	AB -AA -121-737- -RT A PUMP ROOM		Information	OPEN	4	SHUT	1	
1 -RT -1G33F010A -VGB	RWCU PUMP A VENT	AB -AA -121-737- -MEZZ		Information	OPEN	4	OPEN	1	
1 -RT -1G33F011A -VGB	RWCU PUMP A VENT	AB -AA -121-737- -RT A PUMP ROOM		Information	OPEN	4	OPEN	1	
1 -RT -1G33F008A -VGB	RWCU PUMP A DRN	AB -AA -121-737- -RT A PUMP ROOM		Information	OPEN	4	SHUT	1	
1 -RT -1G33F009A -VGB	RWCU PUMP A DRN	AB -AB -121-737- -RT A PUMP ROOM		Information	OPEN	4	SHUT	1	

Component	Note No.	Note Text
01-AP -1AP27E7A -E	1	MCC "Contacts OPEN" BKR check: Int _____ Date _____

Equipment ID:

1 -RT -1G33C001A -MP

Description / Special Inst:

THIS CLEARANCE SECTION IS FOR TRAINING PURPOSES ONLY!

This Clearance Section removes RT Pump A from service for pump seal replacement.
Ensure RT Pump "A" is S/D and vented in accordance with CPS 3303.01 prior to hanging Section.
References: M05-1076-004, M05-1047-007, M05-1032-002, M05-9076-001 & E02-1RT99-004.

Reason

See work document description.

Hazards

CC is isolated but not vent/drained as discussed with Mechanical Maintenance.
RT Pump "A" suction has double valve protection, discharge has only single valve protection. It the discharge valve leaks by the RT System will have to be shutdown and isolated.

Restoration Inst:

Ensure any TSR Package has been cleared prior to returning
Restoration position in accordance with 3203.01V001, 3303.

Attribute Description	
ITS, ORM or ODCM impacts.	No
Annunciator impacts.	None
Notify the following prior to hanging.	None

Master

Number	Equipment ID
FXXXXX REV. 00	1 -RT -1G33C001A -M

Faulted

Status	Des		ion
Prepared	Prepared By		:37
Technical Reviewed	Technical Revi		:00
Tagging Authority Approval	Tagging Autho		:00
Hung	Hung By		:00
Verified Hung	Verified Hung I		:00
Drained / Vented or N/A	Drained/Vented or N/A		00/00/0000 00:00
Removal Prepared	Removal Prepared By		00/00/0000 00:00
Removal Approved	Removal Approved By		00/00/0000 00:00
Tags Removed	Tags Removed By		00/00/0000 00:00
Tags Verified Removed	Tags Verified Removed By		00/00/0000 00:00
Section Archived	Section Archived By		00/00/0000 00:00

Equipment ID	Equipment Description	Equipment Location	Tag Serial	Tag Type	Place. Config.	Place. Seq.	Rest. Config.	Rest. Seq.	Notes
1 -RT -1G33AS005A -IH	RWCU RECIRC PUMP A CONTROL SWITCH	CB - - -800-MCR -1H13-P680		Information	NOT DEPRESSED	1	STOP	3	Pump is DTO for seal replacement.
01-AP -1AP27E7A -E	RWCU RECIRCULATION PUMP 1A 1G33-C001A BREAKER	AB -S -117-762- -AB MCC 1D COMPT. 7A		Danger	OFF	2	ON	2	
1 -RT -1G33F043A -VGT	RWCU PUMP A SUCT ISOL	AB -800-121-750- -MEZZ		Danger	SHUT	3	SHUT	1	
1 -RT -1G33F005A -VGT	RWCU PUMP A SUCT ISOL	AB -AA -121-737- -RT A PUMP ROOM		Danger	SHUT	3	SHUT	1	
1 -RT -1G33F013A -VGT	RWCU PUMP A DISCH ISOL	AB -AA -121-750- -MEZZ		Danger	SHUT	3	SHUT	1	
1 -CC -1CC045A -VGB	RWCU PUMP 1A SEAL COOL INLT	AB -AA -118-737- -RT A PUMP ROOM		Danger	SHUT	3	OPEN	1	
1 -CC -1CC046A -VGB	RWCU PUMP 1A SEAL COOL OUTLT	AB -AA -118-737- -RT A PUMP ROOM		Danger	SHUT	3	OPEN	1	
1 -RT -1G33F308A -VGB	RWCU PUMP A SUCT HDR DRN	AB -AA -121-737- -RT A PUMP ROOM		Information	OPEN	4	SHUT	1	
1 -RT -1G33F309A -VGB	RWCU PUMP A SUCT HDR DRN	AB -AA -121-737- -RT A PUMP ROOM		Informa	OPEN	4	SHUT	1	
1 -RT -1G33F010A -VGB	RWCU PUMP A VENT	AB -AA -121-737- -MEZZ			OPEN	4	OPEN	1	
1 -RT -1G33F011A -VGB	RWCU PUMP A VENT	AB -AA -121-737- -RT A ROOM			OPEN	4	OPEN	1	
1 -RT -1G33F008A -VGB	RWCU PUMP A DRN	AB -AA -12 ROO			OPEN	4	SHUT	1	
1 -RT -1G33F009A -VGB	RWCU PUMP A DRN				OPEN	4	SHUT	1	

Component	Note No.	
01-AP -1AP27E7A -E	1	MC

Master Revised

Admin JPM Worksheet SRO A.3 Identify Dose Rate for RWCU Pump Tagout

Facility: Clinton Task No: _____

Task Title: Identify Dose Rate for RWCU Pump Tagout

Job Performance Measure No: New K/A Reference: G 2.3.1

Applicability: RO__X___ SRO_X__

Examinee: _____ NRC Examiner: _____

Facility Evaluator: _____ Date: _____

Method of testing:

Simulated Performance _____ Actual Performance __X_____

Classroom __X____ Simulator _____ Plant (OSC) __X____

READ TO THE EXAMINEE
I will explain the initial conditions, which steps to simulate or discuss, and provide initiating cues. When you complete the task successfully, the objective for this job performance measure will be satisfied.

Initial Conditions: A leak in the A-RWCU pump mechanical seal was identified last shift. The pump has been secured and the tagout has been developed. RP has competed its survey and no airborne radiation was identified. The Work Control Center estimated that it would take about 30 minutes for 1 individual to hang the tags on the A-RWCU pump.

Task Standard: Applicant has determined that the individual available would NOT be able to hang tags and remain within CPS administrative dose limits. The individual would receive about 60 mRem dose completing the job. The individual would exceed the 4000 mRem annual limit.

Required Materials: Dose map for the RWCU pump room.

General References: CPS 1024.15, Occupational Radiation Exposure Control & Monitoring.

Initiating Cue: It is December 29, 2001, and you an extra SRO on shift.

The ONLY individual available to hang the tagout has the following dose history for 2001:

Dose for January 2001: 7 mRem TEDE
2005 mRem TEDE from Grand Gulf (you were on a rotation during a forced outage from 2/01 to 6/30/01.
1881 mRem TEDE from Clinton (special LPRM replacement project during forced outage (7/1 - 9/30/01).
Dose for October 2001: 15 mRem TEDE
Dose for November 2001: 18 mRem TEDE
Current Dose for month of December 2001: 16 mRem TEDE. No dose for today.

Determine if the individual can hang the tags and not exceed any exposure limits. If ANY exposure limits are exceeded, identify the limit. Examiner provide Applicant with RWCU pump room dose map.

Time Critical Task: ~~YES~~ / **NO**

Validation Time: 15 minutes.

Simulator Set-up Conditions: None.

Start Time: _____

PERFORMANCE INFORMATION

__*____ Performance step: (Denote critical steps with an asterisk)

Step 1: Applicant reviews dose history and determines:

Total yearly dose to date is: 3942 mR TEDE (less than CPS 4000 mR admin limit)
Clinton yearly dose is: 1937 mR TEDE. (less than CPS 2000 mR admin limit)
The individual has a dose margin of 58 mR TEDE (using 4000 mR limit)
The individual has a dose margin of 63 mR TEDE (using 2000 mR limit)
The individual has received 16 mR TEDE for the month of December 2001. No dose today.

Based on dose reading on survey map, the general dose rate for the area is 120 mR/hr. For a 30 minute job, the individual will receive about 60 mR.

STANDARD:

- The individual would NOT be able to hang tags and remain within CPS administrative dose limits. **(Critical)**

- The individual:
  will exceed 4000 mR TEDE limit, **(Critical)**
  will not exceed 2000 mR TEDE limit, and (Non-Critical)
  will exceed monthly goal of 40 TEDE mR. (Non-Critical)

Note to Examiner:
CPS annual TEDE administrative limit of 2000mR for exposure received only from CPS.
CPS annual TEDE administrative limit of 4000mR for exposure received from any facility.
CPS monthly exposure goal is about 40 mR TEDE . (Not an administrative limit.)

SAT _____ UNSAT _____

Terminating cue:.
Applicant has determined that the individual would NOT be able to hang tags and remain within CPS administrative dose limits.
The individual would exceed 4000mR TEDE limit.

Stop Time: _____

VERIFICATION OF COMPLETION

Job Performance Measure No. _____

Examinee's Name:

Examiner's Name:

Date performed:

Facility Evaluator:

Number of attempts:

Time to complete:

Question Documentation:

Question:_____

_____

_____

_____

Response:_____

_____

_____

_____

_____

Result: SAT or UNSAT

Examiner's signature and date: _____ _____

APPLICANT'S COPY

Initial Conditions: A leak in the A-RWCU pump mechanical seal was identified last shift. The pump has been secured and the tagout has been developed. RP has competed its survey and no airborne radiation was identified. The Work Control Center estimated that it would take about 30 minutes for 1 individual to hang the tags on the A-RWCU pump.

Initiating Cue: It is December 29, 2001, and you an extra SRO on shift.

The ONLY individual available to hang the tagout has the following dose history for 2001:

Dose for January 2001: 7 mRem TEDE
2005 mRem TEDE from Grand Gulf (you were on a rotation during a forced outage from 2/01 to 6/30/01.
1881 mRem TEDE from Clinton (special LPRM replacement project during forced outage (7/1 - 9/30/01).
Dose for October 2001: 15 mRem TEDE
Dose for November 2001: 18 mRem TEDE
Current Dose for month of December 2001: 16 mRem TEDE. No dose for today.

Determine if the individual can hang the tags and not exceed any exposure limits. If ANY exposure limits are exceeded, identify the limit. Examiner provide Applicant with RWCU pump room dose map.

RP-1125-03
09/25/1998

CPS RADIOLOGICAL SURVEY SHEET

Aux. Building - 737'EL.

Reactor Water Cleanup Pump (A)

Survey Index No: ___-___-___-___

: _____ Time: _____

Type: ☐ RWP ☐ Other: _____

Performed By: _____

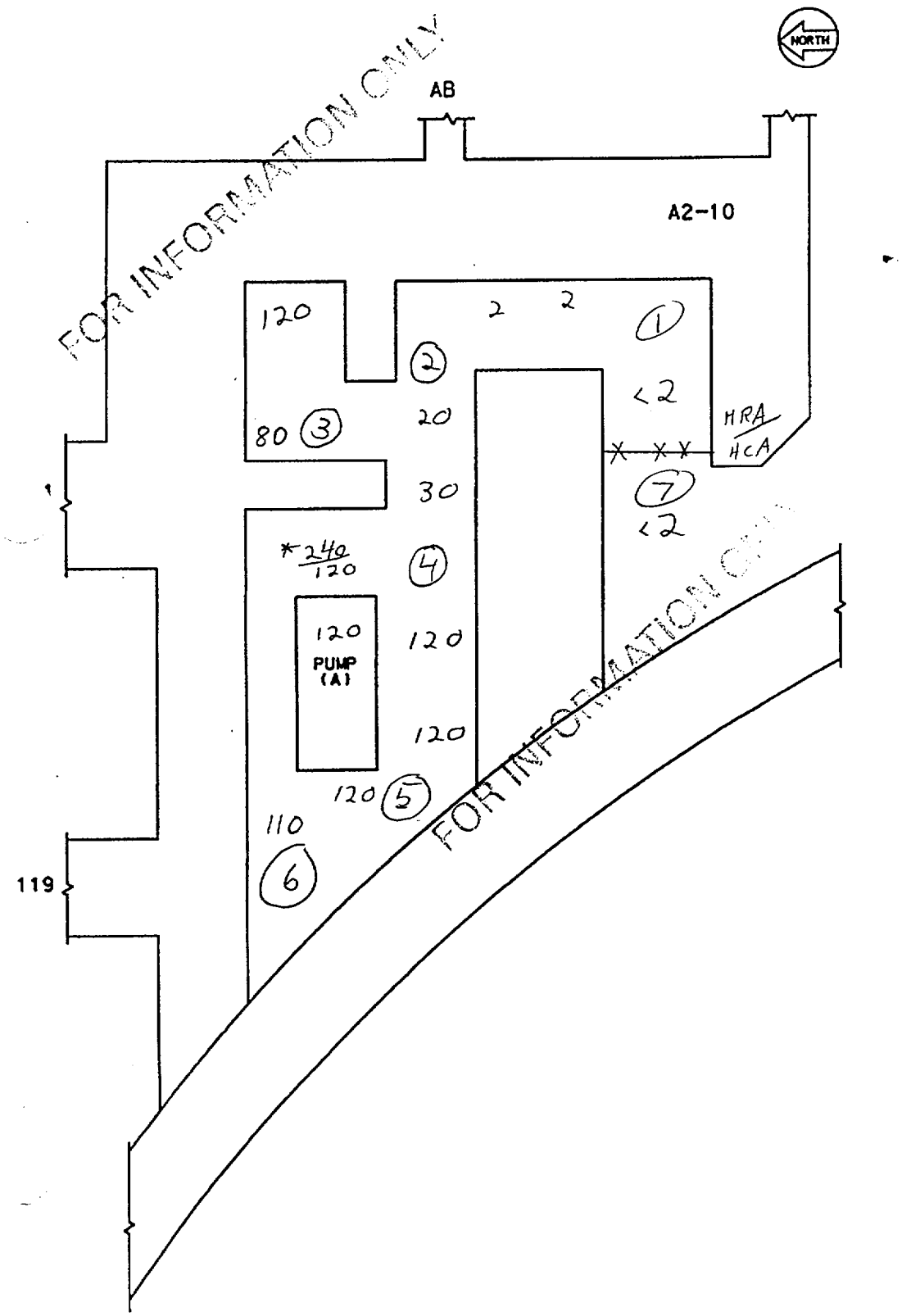
Counted By: _____

Reviewed By: _____ Date: _____

	RADIATION	CONTAMINATION
Inst. Type		
Serial #		
Cal Due Date		

Rx Power _____ Bkgd. _____(cpm)

FOR INFORMATION ONLY



Smear/Location No	dpm/100cm²	Smear/Location No	/
1	7K		
2	10K		
3	15K		
4	25K		
5	25K		
6	25K		
7	<1K		

Remarks:

MRRR/RWP: _____

Tech Dose Received: _____ mR

Notes: Gross Masslinn (~100 ft²)

1. Gen. Area Dose Rates in mRem/hr.
2. *#/# = Contact/30cm Dose Rates
3. Smears Taken at Circled Locations
4. X-X = Radiological Boundary
5. RCA = Radiological Control Area
6. CA = Contaminated Area
7. HCA = High Contamination Area
8. RA = Radiation Area
9. HRA = High Radiation Area
10. RHRA= Restricted High Radiation Area
11. T = Transfer Area
12. CAB = Clean Area Boundary

Admin JPM Worksheet SRO A.4 Emergency Action Level/Protective Action Recommendation

Facility: Clinton _____ Task No: _____

Task Title: Emergency Action Level Determination/Protective Action Recommendation

Job Performance Measure No: New ___ K/A Reference: G 2.4.44 _____

Applicability: RO____ SRO_X___

Examinee: _____ NRC Examiner: _____

Facility Evaluator: _____ Date: _____

Method of testing:

Simulated Performance _____ Actual Performance __X_____

Classroom ____X_____ Simulator _____ Plant (OSC) __X____

READ TO THE EXAMINEE
I will explain the initial conditions, which steps to simulate or discuss, and provide initiating cues. When you complete the task successfully, the objective for this job performance measure will be satisfied.

Initial Conditions:
The plant experienced a hydraulic ATWS from 100% power. SLC did not inject. Power was reduced to <5% by lowering RPV level. All rods were manually inserted to shut down the Rx. Actions to restore RPV level and pressure control are in progress. Actions to stabilize primary and secondary containment parameters are in progress. The PASS Team is being briefed to take a sample. Field Monitoring Teams have been dispatched.

Specific parameters: Drywell radiation levels: ~ 4.6E+5 R/hr.
Containment Radiation levels: ~ 2.8E+5 R/hr.
Dose at site boundary: ~ 3 Rem/hr.

Task Standard: Correctly Determine the Emergency Action Level/Protective Action Recommendation for the conditions provided.

NOTE - THIS SRO ADMIN JPM IS TO BE PERFORMED AFTER SCENARIO ONE.

Required Materials: Procedure EC-02, Emergency Classification and Attachments.
Attachment 1: Index of Emergency Classification Guidelines.
Attachment 2: Emergency Classification Guidelines - Category 1, Fission Product Boundary Failure; Category 2, Fuel Damage/Degraded Core; Category 3, Reactor Scram; and Category 4, Radiological Emergency.
Procedure EC-05, Site Area Emergency.
Procedure EC-06, General Emergency.
Procedure RA-02, Protective Action Recommendations.

General References:

Admin JPM Worksheet SRO A.4 Emergency Action Level/Protective Action Recommendation

Initiating Cue:
You are the Shift Manager. Determine the Emergency Action Level/Protective Action Recommendation for the conditions provided and provide the justification for you classification.

Time Critical Task: ~~YES~~ / **NO**

Validation Time: 15 minutes

Simulator Set-up Conditions: None

Start Time: _____

PERFORMANCE INFORMATION

_____ Performance step: (Denote critical steps with an asterisk)

Step 1:

Applicant obtains simulator copy of:

- Procedure EC-02, Emergency Classification and Attachments.
- Attachment 1: Index of Emergency Classification Guidelines.
- Attachment 2: Emergency Classification Guidelines - Category 1, Fission Product Boundary Failure; Category 2, Fuel Damage/Degraded Core; Category 3, Reactor Scram; and Category 4, Radiological Emergency.
- Procedure EC-05, Site Area Emergency.
- Procedure EC-06, General Emergency.
- Procedure RA-02, Protective Action Recommendations.

STANDARD: Applicant obtains simulator copies or procedures.

SAT _____ UNSAT _____

_____ Performance step: (Denote critical steps with an asterisk)

Step 2:

Applicant determines Emergency Action Level Recommendation for the conditions provided.

STANDARD: EAL - General Area Emergency based on EC-02, Attachment 2, Category 1, Symptom 1.1; OR Category 2, Symptom 2.3; OR Category 3, Symptoms 3.3 or 3.4.

CUE: If asked, winds are from the SE 2-3 knots - Steady. No adverse weather conditions predicted.

COMMENTS:

- Based on EC-02, Att 2, Cat 1, Fission Product Boundary Failure, Symptom 1.1, General Guidance - Alert (failed fuel clad).
- Based on EC-02, Att 2, Cat 2, Fuel Damage/Degraded Core, Symptom 2.3, core Melt - General Area Emergency (any core melt situation).
- Based on EC-02, Att 2, Cat 3, Radiological Emergency, Symptom 3.3, High Radiation Levels Outside the Plant - General Area Emergency (measured radiation levels at site boundary > 1 Rem TEDE).
- Based on EC-02, Att 2, Cat 3, Radiological Emergency, Symptom 3.4, High Radiation Levels Inside the Plant - General Area Emergency (radiation levels in containment equivalent to 1.0E-6 R/hr on Containment High Range Gamma Monitors).
- Based on EC-02, Att 2, Cat 7, Reactor Scram, Symptom 7.1, RPS Functions Causing a Rx Scram - Site Area Emergency (failure of RPS to complete scram & power remains > 5%).

SAT _____ UNSAT _____

___*____ Performance step: (Denote critical steps with an asterisk)

Step 3:

Applicant determines Protective Action Recommendation for the conditions provided.

STANDARD: PAR - Evacuate 0-2 mile radius and 2-5 miles downwind (Sectors P, Q, R) and shelter the remainder of the EPZ.

CUE: If asked, winds are from the SE 2-3 knots - Steady. No adverse weather conditions predicted.

COMMENTS:

- Based on RA-02, Att 1, "Protective Action Chart."

SAT _____ UNSAT _____

Terminating cue: Applicant determines the EAL is a General Area Emergency & PAR is Evacuate 0-2 mile radius and 2-5 miles downwind (Sectors P, Q, R) and shelter the remainder of the EPZ.

Stop Time: _____

VERIFICATION OF COMPLETION

Job Performance Measure No. _____

Examinee's Name:

Examiner's Name:

Date performed:

Facility Evaluator:

Number of attempts:

Time to complete:

Question Documentation:

Question:_____

_____

_____

_____

Response:_____

_____

_____

_____

_____

Result: SAT or UNSAT

Examiner's signature and date: _____ _____

Admin JPM Worksheet SRO A.4 Emergency Action Level/Protective Action Recommendation

APPLICANT'S COPY

Initial Conditions:
The plant experienced a hydraulic ATWS from 100% power. SLC did not inject. Power was reduced to <5% by lowering RPV level. All rods were manually inserted to shut down the Rx. Actions to restore RPV level and pressure control are in progress. Actions to stabilize primary and secondary containment parameters are in progress. The PASS Team is being briefed to take a sample. Field Monitoring Teams have been dispatched.

Specific parameters: Drywell radiation levels: ~ 4.6E+5 R/hr.
Containment Radiation levels: ~ 2.8E+5 R/hr.
Dose at site boundary: ~ 3 Rem/hr.

Initiating Cue:
You are the Shift Manager. Determine the Emergency Action Level/Protective Action Recommendation for the conditions provided and provide the justification for you classification.

FINAL AS-ADMINISTERED WALKTHROUGH JPMS

FOR CLINTON THE WEEK OF JUNE 12, 2000

CLINTON POWER STATION

JPM Worksheet - B.1.a, Reset a Reactor Scram per CPS No. 4100.01 - Alt Path

Facility: Clinton Power Station Task No: 015200C638

Task Title: Reset a Reactor Scram per CPS No. 4100.01 - Alternate Path

Job Performance Measure No: 015200J043 Modified

K/A Reference:

K/A SYSTEM NUMBER	K/A NUMBER	Importance Rating RO	Importance Rating SRO
212000 - Reactor Protection System	A 4.04	3.9	3.9
	A 4.14	3.8	3.8

Examinee: _____ NRC Examiner: _____

Facility Evaluator: _____ Date: _____

Method of testing:

Simulated Performance _____ Actual Performance ___X___

Classroom _____ Simulator ___X___ Plant _____

READ TO THE EXAMINEE

I will explain the initial conditions, which steps to simulate or discuss, and provide initiating cues. When you complete the task successfully, the objective for this job performance measure will be satisfied.

Initial Conditions:

A Reactor Scram has occurred, plant conditions are stable and conditions are satisfied to reset the SCRAM.

Task Standard:

Reactor Scram is reset and then re-scrammed when subsequently two (2) rods drift out.

Required Materials: None

CLINTON POWER STATION

JPM Worksheet - B.1.a, Reset a Reactor Scram per CPS No. 4100.01 - Alt Path

General References:

CPS No. 4100.01, REACTOR SCRAM

Initiating Cue:

A Reactor Scram has occurred. Plant conditions are stable. No fuel failure is indicated. You are directed to reset the Reactor Scram per CPS 4100.01, Reactor Scram.

Time Critical Task: YES/NO

Validation Time: 10 minutes

Simulator Set-up Conditions:

Initialize to any suitable IC. Place the Reactor Mode Switch in "SHUTDOWN". Drive IN the SRMs and IRMs. Wait approximately 3 minutes for conditions to stabilize, silence, acknowledge, and reset the annunciators. (You may want to Snapshot to IC-40). Select and enter 2 Rods that will drift to full out upon scram reset. (Rods 12-41 & 36-33)

Start Time:_____

CLINTON POWER STATION

JPM Worksheet - B.1.a, Reset a Reactor Scram per CPS No. 4100.01 - Alt Path

PERFORMANCE INFORMATION

_*_ Performance step: (Denote critical steps with an asterisk)

4.8 b) Place all four BYP DISCH VOL HI LVL DIV 1(2,3&4) bypass switches to BYPASS.

Standard: Key-lock switches placed in BYPASS for all four BYP DISCH VOL HI LVL DIV 1(2,3&4) switches (critical).

Non-critical
Applicant silences and acknowledges each of the following P680 annunciators:
5004-1F - DIV 1 DIS VOL HI WTR TRIP BYP
5004-2F - DIV 4 DIS VOL HI WTR TRIP BYP
5005-1F - DIV 2 DIS VOL HI WTR TRIP BYP
5005-2F - DIV 3 DIS VOL HI WTR TRIP BYP

Comment:

SAT _____ UNSAT _____

_*_ Performance step: (Denote critical steps with an asterisk)

4.8.c) When SCRAM & ARI/RPT signals are clear, RESET Reactor Scram and ARI/RPT trips.

Standard: Applicant depresses all four SCRAM Reset Pushbuttons (critical)

Non-critical

Applicant verifies the following:
1. Blue lights above the Manual Scram pushbuttons are ON
2. ARI/RPT System 1 and 2 Initiated and Seal In Active lights are OFF

NOTE: At anytime following scram reset candidate may notice 2 rods drifting out of core however, it is not expected that the rods will be noticed until the ROD DRIFT Alarm is reset and then re-annunciates.

Comment:

SAT _____ UNSAT _____

___ Performance step: (Denote critical steps with an asterisk)

4.8.d) Verify 1C11-F010/F011 & F180/F181, Scram Discharge Volume Vent and Drain Valves open.

Standard: Applicant verifies Red lights for 1C11-F010/F011 & F180/F181 are ON and GREEN lights extinguish.

NOTE: This step may not be performed if drifting rods are noticed

Comment:

SAT _____ UNSAT _____

___ Performance step: (Denote critical steps with an asterisk)

4.8.e) Re-verify all control rods are still fully inserted.

Standard: Applicant verifies control rod status on Full Core Display

NOTE: Applicant may switch between RAW Data and COOK Data to assist in determining rod position status. Rods are drifting out but may not be noticed until rod drift alarm re-annunciates (Rods 12-41, 36-33)

Comment:

SAT _____ UNSAT _____

___ Performance step: (Denote critical steps with an asterisk)

4.8.f) Clear the RESET DRIFT on the P680 System Mode panel.

Standard: Applicant depresses the RESET DRIFT Pushbutton on the P680 System Mode panel.
Applicant acknowledges and resets annunciator 5006-4G ROD DRIFT

Comment:

SAT _____ UNSAT _____

_*_ Performance step: (Denote critical steps with an asterisk)

Detects that multiple rods are withdrawing/drifting out of the core

Standard: Applicant recognizes multiple rod drifts (critical).

Non-critical
Acknowledges annunciator 5006-4G ROD DRIFT
Applicant verifies control rod status on Full Core Display

Comment:

SAT _____ UNSAT _____

---

*__ Performance step: (Denote critical steps with an asterisk)

Performs Immediate Operator Actions of CPS No. 4007.02 INADVERTENT ROD MOVEMENT

Attempts to stop rod movement
Recognizes that more than one (1) rod drift light is energized or continuous rod withdrawal can not be stopped
THEN Scrams the reactor. (INSERTS a Manual Reactor Scram)
Verifies shutdown criteria is met

Standard: Applicant INSERTS a Manual Reactor Scram and verifies all rods in.
Applicant may initiate ARI.

Comment:

SAT _____ UNSAT _____

Terminating cue: The reactor is re-scrammed and all rods are verified in.

SAT _____ UNSAT _____

CLINTON POWER STATION

JPM Worksheet - B.1.a, Reset a Reactor Scram per CPS No. 4100.01 - Alt Path

VERIFICATION OF COMPLETION

Job Performance Measure No. _____

Examinee's Name:

Examiner's Name:

Date performed:

Facility Evaluator:

Number of attempts:

Time to complete:

Question Documentation:

Question:_____
_____
_____

Response:_____
_____
_____
_____

Result: SAT or UNSAT

Examiner's signature and date: _____ _____

CLINTON POWER STATION

JPM Worksheet

INITIATING CUE:

A Reactor Scram has occurred.
Plant conditions are stable.
No fuel failure is indicated.
You are directed to reset the Reactor Scram per CPS 4100.01, Reactor Scram.

CLINTON POWER STATION

JPM Worksheet - B.1.b, Roll the Turbine Generator and Bring it to Rated Speed - Alt. Path

Facility: Clinton Power Station Task No:011203C005

Task Title: Roll the Turbine Generator and Bring it to Rated Speed per CPS No. 3105.01 - Alternate Path

Job Performance Measure No. 011203J002 Modified

K/A Reference:

K/A SYSTEM NUMBER	K/A NUMBER	Importance Rating RO	Importance Rating SRO
245000	A3.02	2.8	2.8
	A2.09	2.5	2.8

Examinee: _____ NRC Examiner: _____

Facility Evaluator: _____ Date: _____

Method of testing:

Simulated Performance _____ Actual Performance ___X___

Classroom _____ Simulator ___X___ Plant _____

READ TO THE EXAMINEE

I will explain the initial conditions, which steps to simulate or discuss, and provide initiating cues. When you complete the task successfully, the objective for this job performance measure will be satisfied.

Initial Conditions:

A plant startup is in progress with the Turbine Generator ready to roll to rated speed.

Task Standard:

Main Turbine tripped based on high bearing vibrations > 8 mils with main Turbine speed ≤ 800 rpm.

Required Materials: None

CLINTON POWER STATION

JPM Worksheet - B.1.b, Roll the Turbine Generator and Bring it to Rated Speed - Alt. Path

General References:

CPS No. 3004.01, TURBINE STARTUP AND GENERATOR SYNCHRONIZATION
CPS No. 3105.01, TURBINE

Initiating Cue:

A plant startup is in progress. The CRS directs you to roll the turbine generator and bring it to rated speed per CPS No. 3105.01.

All prerequisites for Turbine Roll are complete including those required by CPS No. 3105.01 step 8.1.6.a. Additional information about the completed prerequisites:

- The main turbine has been on the Turning Gear Motor for a minimum of 4 hours.
- CV-4 testing has been accomplished.
- Hydraulic power unit for turbine control is in operation.

Currently at Step 8.2.6 in CPS No. 3004.01 and Step 8.1.6.f in CPS No. 3105.01.

You are to focus on those Main Control Room operator actions performed by the 'A' CRO.

Operators are available in the field at the Turbine Generator and on 781' Control Building.

If requested, provide applicant with a signed copy of CPS 3004.01.

Time Critical Task: NO

Validation Time: 20 minutes

Simulator Set-up Conditions:

Initialize to a suitable IC for Turbine Roll (#21).
Set Vibration on MT Bearing #4 to 75%.
Select OFF on chest/shell warming.
Obtain CPS No. 3004.01 and Initial section 5.0 and Section 8 up to the step to roll the Turbine Generator.

Start Time:_____

_____ Performance step: (Denote critical steps with an asterisk)

8.1.6.f) (MCR) Verify annunciators clear:

- TROUBLE TSI CAB (5007-4B)
- TROUBLE TSI CAB (5007-4C)

Standard: Applicant verifies annunciators clear on MCR panel P680

- TROUBLE TSI CAB (5007-4B)
- TROUBLE TSI CAB (5007-4C)

Comment:

SAT _____ UNSAT _____

__*__ Performance step: (Denote critical steps with an asterisk)

8.1.6.g) Select the "MEDIUM" STARTING RATE:

Cue:

Standard: Applicant depresses "Medium" pushbutton on MCR panel P680 Turbine controls and verifies pushbutton light ON.

Comment:

SAT _____ UNSAT _____

_____ Performance step: (Denote critical steps with an asterisk)

8.1.7.a) IF the automatic feature fails, THEN Use 1ES-EHS, Exh Hood Spray Init Vlv to maintain exhaust hood temperature between 140 - 200 F.

Standard: Auto feature is working

NOTE: Exhaust hood temperatures should not require use of 1ES-EHS.

Comment:

SAT _____ UNSAT _____

_____ Performance step: (Denote critical steps with an asterisk)

8.1.7.b) IF: During the speed increase, a turbine condition is detected which is serious enough to require a speed reduction, THEN: The speed reduction should be done by pushing CLOSE VALVES or tripping the turbine.

Standard: If turbine condition is serious enough candidate uses pushing CLOSE VALVES <u>or</u> trips turbine.

Comment:

SAT _____ UNSAT _____

_____ Performance step: (Denote critical steps with an asterisk)

8.1.7.c) Check the following items as turbine speed increases:

Vibration (Refer to Step 8.3.7)
No detectable rubs
Exhaust hood temperature
Bearing oil flows and temperatures
P870 turbine recorders 1UR-TS001/2

Standard:

Applicant monitors the following items from MCR as turbine speed increases:

Vibration (Refer to step 8.3.7)
Exhaust hood temperature
P870 turbine recorders 1UR-TS001/2

Applicant request information on the following from the field either from NLO or Group Leader:

No detectable rubs
Bearing oil flows and temperatures

NOTE: P870 turbine recorders 1UR-TS001/2 would normally be monitored by the 'B' CRO. The 'A' CRO does have indications of these parameters on DCS screen displays.

Cue: When asked, inform applicant there are no detectable rubs and bearing oil flows and temperatures are normal.

SAT _____ UNSAT _____

__*__ Performance step: (Denote critical steps with an asterisk)

8.1.7.d) Select SPEED SET RPM at 100 and observes

Main Stop Valves (MSVs) open.
Intercept Valves (IVs) open slowly.
No. 1 and 2 Control Valves (CVs) begin to open.
Main Turbine rolls off the turning gear
SPEED INCREASING light comes "ON".

Standard: Applicant depresses the "100" SPEED SET RPM and verifies pushbutton light is ON. (critical)

Non-critical
Applicant observes the following:

Main Stop Valves (MSVs) open - observes DCS display indication (Red Indication)
Intercept Valves (IVs) open slowly - observes DCS display indication (Red Indication)

Cue: If asked, tell applicant that IVs indicate open.

NOTE: Simulator IV position indications are incorrect - they don't open until turbine is rolled and is > 1200 rpm, this has been documented on Simulator Problem Report.

- No. 1 and 2 Control Valves (CVs) begin to open - observes DCS display indication.
- Main Turbine rolls off the turning gear - observes DCS display indication (B-CRO, window 5017, 7C)
- SPEED INCREASING light comes "ON" - observes panel display indication.
- Annunciators Div 1 or 4 (window 5004, 1D), and Div 2 or 3 (window 5005, 1D); TSV CV TRIP clear.

Comment:

SAT _____ UNSAT _____

_____ Performance step: (Denote critical steps with an asterisk)

8.1.7.e) After the turbine rolls off the turning gear, Place the Turning Gear Motor, 1TG03K control switch in AUTO/AFTER STOP to enable the auto start feature.

Standard: Applicant verifies Turning Gear disengages as seen on DCS or disengaged green light ON indicated on MCR panel P870.

NOTE: Placing the Turning Gear Motor, 1TG03K control switch in AUTO/AFTER STOP would normally be done by the 'B' CRO.

Cue: Inform applicant that the B-CRO performed this action.

Comment:

SAT _____ UNSAT _____

__*__ Performance step: (Denote critical steps with an asterisk)

8.1.7.f) WHEN THE "AT SET SPEED" LIGHT comes "ON", select SPEED SET RPM at 800 and observe the SPEED INCREASING light comes "ON".

Standard:

When "AT SET SPEED" light comes ON Applicant depresses "800" SPEED SET RPM Pushbutton and verifies pushbutton light ON. (Verifying light ON is not critical)

Comment:

SAT _____ UNSAT _____

_____ Performance step: (Denote critical steps with an asterisk)

8.1.7.g) (Local operator action, C area operator) When turbine speed is greater than 100 rpm, Reset the auxiliary speed signal lights on the system monitor panel by depressing both ELECTRICAL MALFUNCTION RESET push-buttons simultaneously on the System Monitoring panel

Standard: Direct C Area Operator on Control Building 781' to reset the auxiliary speed signal lights on the system monitor panel by depressing both ELECTRICAL MALFUNCTION RESET push-buttons simultaneously on the System Monitoring panel.

Cue: Panel not available in the simulator, if asked tell applicant that the action is completed.

Note to examiner: The Electrical Malfunction System Fault light remains illuminated when the local operator depresses the Electrical Malfunction Reset Pushbutton.

SAT _____ UNSAT _____

_____ Performance step: (Denote critical steps with an asterisk)

High Vibration Turbine Shaft (Pre Trip) occurs at some point during the roll up to prior to 800 rpm. References CPS 5007.04 window 4-D.

Standard: Applicant reports main turbine vibrations trending up, Applicant refers to CPS No. 3105.01, Turbine High Vibration levels section 8.3.7. If annunciator 5007-4D is received, applicant refers to CPS No. 5007.04 for window 4-D.

NOTE: Auto trip occurs at 10 mils (3.3 second time delay). Vibrations should not exceed 9 mils based on setup conditions.

Comment:

SAT _____ UNSAT _____

__*__ Performance step: (Denote critical steps with an asterisk)

CPS 3105.01 ABNORMAL PERFORMANCE, section 8.3.7, "Turbine High Vibration levels". Trip the turbine if vibrations are ≥ 8 Mils.

Standard: Applicant simultaneously depresses both Turbine Trip Pushbuttons (critical) when vibrations ≥ 8 Mils. Applicant may trip turbine prior to 8 Mils. Verifies the main turbine is tripped.

Identifies:

- all turbine valves closed on DCS display (green light)
- turbine speed is lowering.
- trip valve indicating lights are backlit green and "tripped" is illuminated

Comment:

SAT _____ UNSAT _____

Terminating cue:

The Turbine Generator is tripped.

CLINTON POWER STATION

JPM Worksheet - B.1.b, Roll the Turbine Generator and Bring it to Rated Speed - Alt. Path

VERIFICATION OF COMPLETION

Job Performance Measure No. _____

Examinee's Name:

Examiner's Name:

Date performed:

Facility Evaluator:

Number of attempts:

Time to complete:

Question Documentation:

Question:_____

_____

_____

_____

Response:_____

_____

_____

_____

_____

Result: SAT or UNSAT

Examiner's signature and date: _____ _____

CLINTON POWER STATION

JPM Worksheet - B.1.b

INITIATING CUE:

A plant startup is in progress.

You are directed by the CRS to roll the turbine generator and bring it to rated speed per CPS No. 3105.01.

All prerequisites for Turbine Roll are complete including those required by CPS No. 3105.01 step 8.1.6.e. Additional information about the completed prerequisites:

- The main turbine has been on the Turning Gear Motor for a minimum of 4 hours.
- CV-4 testing has been accomplished.
- Hydraulic power unit for turbine control is in operation.

Currently at Step 8.2.6 in CPS No. 3004.01 and Step 8.1.6.f in CPS No. 3105.01.

You are to focus on those Main Control Room operator actions performed by the 'A' CRO.

Operators are available in the field at the Turbine Generator and on 781' Control Building.

CLINTON POWER STATION
JPM Worksheet - B.1.c,
Emergency Shutdown and Isolation of One Reactor Recirculation
Loop from Fast Speed per CPS No. 3302.01

Facility: Clinton Power Station Task No:014202J001

Task Title: Emergency Shutdown And Isolation of One Reactor Recirculation Loop From Fast Speed per CPS No. 3302.01

Job Performance Measure No:014202J001

K/A Reference:

202001	A4.01	3.7	3.7
	A4.02	3.5	3.5
	A4.05	3.3	3.3

Examinee: _____ NRC Examiner: _____

Facility Evaluator: _____ Date: _____

Method of testing:

Simulated Performance _____ Actual Performance ___X___

Classroom _____ Simulator ___X___ Plant _____

READ TO THE EXAMINEE

I will explain the initial conditions, which steps to simulate or discuss, and provide initiating cues. When you complete the task successfully, the objective for this job performance measure will be satisfied.

Initial Conditions:

The plant is operating at 100 % power step, 71 on the 104% rod line.

Task Standard:

Reactor Recirculation Pump B shutdown and the "B" Loop of RR System isolated

CLINTON POWER STATION
JPM Worksheet - B.1.c,
Emergency Shutdown and Isolation of One Reactor Recirculation
Loop from Fast Speed per CPS No. 3302.01

Required Materials: None

General References:

CPS No. 3302.01, REACTOR RECIRCULATION

Initiating Cue:

The plant is operating at 100 % power step, 71 on the 104% rod line. The Reactor Recirc. Pump "B" outer seal has failed and the inner seal is degrading. You are to perform an Emergency Shutdown and isolation of the "B" Reactor Recirculation Loop. Stop prior to isolating CRD seal injection flow.

Time Critical Task: YES/NO

Validation Time: 15 minutes

Simulator Set-up Conditions:

1. Initialize to any suitable IC (IC-1 is recommended) with RR Pumps in fast speed and rod line such that trip does not cause entry into restricted zone.
2. Load Remote LC103 to shut 1C11-F026B using a remote or manual trigger.
3. Insert RR06C, RR Pump "B" Seal B1 Failure, 100%.
4. Insert RR06D, RR Pump "B" Seal B2 Failure, 100% with 5 minute ramp, then take the simulator out of FREEZE.
5. Start one mixing compressor and maintain DW pressure between 0.3 and 1.0 psig.
6. Freeze the simulator when Drywell pressure is approximately 0.6 psig.

Start Time_____

CLINTON POWER STATION
JPM Worksheet - B.1.c,
Emergency Shutdown and Isolation of One Reactor Recirculation
Loop from Fast Speed per CPS No. 3302.01

PERFORMANCE INFORMATION

_____ Performance step: (Denote critical steps with an asterisk)

8.2.3 RR Loop - Emergency Shutdown / RR Pump Trip

CAUTION
Core flow near the RESTRICTED ZONE increases the potential for thermal hydraulic instabilities. If instability is observed or the restricted zone is entered, an immediate SCRAM is required. Do not operate with partial FW heating (4005.01) when only one RR pump is operating (Rapid Plant Shutdown required). Single Loop Operating limits are controlled per the appropriate 300x.01 integrated operating procedure.

___*___ Performance step: (Denote critical steps with an asterisk)

8.2.3.1 Trip RR Pump A(B), ensuring pump amps and speed show a complete pump trip from fast speed by opening Bkr 3A(3B), 4A(4B) or 5A(5B).

Standard: The operator depresses the pushbuttons for the 3B, 4B, or 5B breaker to the open position. Breaker indication is green for motor breaker used. Pump amps on CRT and speed indication on P678 are zero.

NOTE: Operator may lower reactor water level prior to tripping the pump.

Comment:

SAT_____UNSAT_____

___*___ Performance step: (Denote critical steps with an asterisk)

8.2.3.2 Shut 1B33-F067A(B), Discharge Vlv.

Standard: The close pushbutton for 1B33-F067B is depressed, and when the valve is shut, observes its red light is "OUT" and the green light is "ON" (indicates shut).

Note: It will take two minutes to fully close this valve.
Annunciator "RECIRC MTR B LS AUTO XFER CKT NA" will alarm when 1B33-F067B closes.

Comment:

SAT_____UNSAT_____

_____Performance step: (Denote critical steps with an asterisk)

8.2.3.3 Enter CPS No. 4008.01, ABNORMAL REACTOR COOLANT FLOW.

Standard: Verifies Immediate Operator Actions. Informs CRS that plant is in the 'EXIT' region of the P/F Map.

Comment:

SAT_____UNSAT_____

___*___Performance step: (Denote critical steps with an asterisk)

8.2.4 Idle RR Loop - Isolating

CAUTION: With the RR pump shutdown and injection flow stopped, seal cavity will reach 185°F in ~ 30 to 60 minutes. Seal damage may occur at > 250°F and the time necessary to reach 250°F will be dependent upon the seal leakage rate and initial cavity temperature.

Securing CRD injection to a RR pump which has been secured and isolated due to a seal leak will cause an increase in DW airborne activity as the loop depressurizes to atmosphere through the seal.

8.2.4.1 Shut 1G33-F100(F106), Recirc Loop A(B) Suct. [RT valves]

Standard: The operator depresses the CLOSE pushbutton for 1G33-F106, the valve indicates shut, green light "ON", red light "OFF".

Comment:

SAT_____UNSAT_____

_____Performance step: (Denote critical steps with an asterisk)

8.2.4.2 Shut 1B33-F067A(B), Discharge Vlv.

Standard: Previously Shut.

Comment:

SAT_____UNSAT_____

___*___Performance step: (Denote critical steps with an asterisk)

8.2.4.3 Shut 1B33-F075A(B), Pmp A(B) Seal Stag Shutoff Vlv.

Standard: The operator takes the 1B33-F075B switch to the CLOSE position.

Comment:

SAT_____UNSAT_____

___*___Performance step: (Denote critical steps with an asterisk)

8.2.4.4 IF Loop suction isolation is required to prevent further system degradation or system challenges
THEN Shut 1B33-F023A(B), Pmp Suction Vlv.

Standard: The operator depresses the CLOSE pushbutton for 1B33-F023B, and the valve indicates shut, green light "ON", and red light "OFF".

NOTE:
1. Per the initiating cue on seal status.
2. It will take two minutes to fully close this valve.
3. The annunciator "RECIRC MTR B LS AUTO XFER CKT NA" will alarm when 1B33-F023B closes.

Comment:

SAT_____UNSAT_____

_____ Performance step: (Denote critical steps with an asterisk)

8.2.4.5 Notify Chemistry that the RR loop will be isolated. Coordinate with Chemistry to establish normal water chemistry limits for power operation before fully isolating the loop due to possible high conductivity intrusion (i.e., isolating the idle loop prior to power accession).

Standard: The operator reminds the CRS to contact Chemistry concerning chemistry limits

NOTE: As the CRS, acknowledge the reminder.

Comment:

SAT_____UNSAT_____

_____ Performance step: (Denote critical steps with an asterisk)

8.2.4.6 When Idle RR loop has cooled down to < 250°F,
or
In the event the RR seals are failed, idle RR loop has depressurized to ~ Drywell pressure.

Then If RR Aux Seal Inj Pump is not running, then shut 1C11-F026A(B), CRD Supp Isol To RR Pump a(B).

Standard: Allows loop depressurization via blown recirc. pump seals.

Cue: Time has been compressed and that the loop has been depressurized to approximately drywell pressure.

Comment:

SAT_____UNSAT_____

Terminating cue:

This is all the further we need to go in this procedure. (Examiner terminates JPM.)

CLINTON POWER STATION
JPM Worksheet - B.1.c,
Emergency Shutdown and Isolation of One Reactor Recirculation
Loop from Fast Speed per CPS No. 3302.01

VERIFICATION OF COMPLETION

Job Performance Measure No. _____

Examinee's Name:

Examiner's Name:

Date performed:

Facility Evaluator:

Number of attempts:

Time to complete:

Question Documentation:

Question:_____
_____
_____

Response:_____
_____
_____
_____

Result: SAT or UNSAT

Examiner's signature and date: _____ _____

INITIATING CUE

The plant was operating at 100 % power step, 71 on the 104% rod line. The Reactor Recirc. Pump "B" outer seal has failed and the inner seal is failing. The CRS has directed you to perform an Emergency Shutdown and isolation of the "B" Reactor Recirculation Loop.

CLINTON POWER STATION

JPM Worksheet B.1.d, Perform Emergency Containment Vent and Purge to Control Containment Hydrogen Levels per CPS No. 4411.06 - Alt Path

Facility: Clinton Power Station Task No:015200C627

Task Title: Perform Emergency Containment Vent and Purge to Control Containment Hydrogen Levels per CPS No. 4411.06

Job Performance Measure No:015200J040

K/A Reference:

K/A SYSTEM NUMBER	K/A NUMBER	IMPORTANCE RATING ROSRO
223001	A 2.04	3.73.8
	A 2.06	4.1*4.1*

Examinee: _____ NRC Examiner: _____

Facility Evaluator: _____ Date:_____

Method of testing:

Simulated Performance _____ Actual Performance ___x___

Classroom _____ Simulator ___x___ Plant _____

READ TO THE EXAMINEE

I will explain the initial conditions, which steps to simulate or discuss, and provide initiating cues. When you complete the task successfully, the objective for this job performance measure will be satisfied.

Initial Conditions: Primary containment hydrogen concentration is 1%.

CLINTON POWER STATION

JPM Worksheet B.1.d, Perform Emergency Containment Vent and Purge to Control Containment Hydrogen Levels per CPS No. 4411.06 - Alt Path

Task Standard: Containment Hydrogen Purge is initiated in accordance with CPS No. 4411.06, EMERGENCY CONTAINMENT VENTING, PURGING, AND VACUUM RELIEF. Completion of the task requires use of a Standby Gas Treatment Train other than the one initially prescribed.

Required Materials: None

General References:

CPS No. 4411.06, EMERGENCY CONTAINMENT VENTING, PURGING, AND VACUUM RELIEF

Initiating Cue: You are directed to vent and purge the Primary Containment using CPS No. 4411.06, EMERGENCY CONTAINMENT VENTING, PURGING, AND VACUUM RELIEF, Section 2.8, Containment Hydrogen Purge. No other sections of CPS No. 4411.06 have been performed.

Use VG Train 'A'

Time Critical Task: YES/**NO**

Validation Time: 15 Minutes

Simulator Set-up Conditions:

1. Instructor Override Switch for damper 1VG01YA to NORMAL
2. Initialize to IC-21
3. Start both Igniters
4. Start both Hydrogen Mixing Compressors.
5. Verify that Containment pressure is less than 2.6 psig.
6. Remove tags from valves 1VR002A, 1VR002B, 1VQ006A, and 1VQ006B.

START TIME:_____

CLINTON POWER STATION

JPM Worksheet B.1.d, Perform Emergency Containment
Vent and Purge to Control Containment Hydrogen Levels
per CPS No. 4411.06 - Alt Path

PERFORMANCE INFORMATION

_____ Performance step: (Denote critical steps with an asterisk)

2.8.1 Verify CNMT pressure < 2.6 psid by HI CNMT PRESS white indicating light (above 1VG01YA/B switch) being OFF.

Standard: HI CNMT PRESS white light OFF

NOTES:

1. Examinee should also verify that Containment and Drywell temperatures are less than 212°F per the CAUTION at beginning of section.
2. Hydrogen concentration is 1% as stated in Initiating Cue.

Comment:

SAT_____UNSAT_____

__*__ Performance step: (Denote critical steps with an asterick)

2.8.3 Place control switches for both 1VG02YA & B, SGTS Trn A(B) Fuel Bldg Isol Dmprs to the CLOSE position.

Standard: Key lock switches placed/verified in CLOSE position and Green Lights ON.

NOTE: 1VG02YA(B) will indicate shut with control switch in AUTO, switch must be taken to CLOSE to satisfy conditions for the Flowpath.
Annunciators NOT AVAILABLE VG SYS Div 1 and 2 activate

Comment:

SAT_____UNSAT_____

_____ Performance step: (Denote critical steps with an asterisk)

2.8.4 Verify following dampers shut:

a) 1VG02YA & B, SGTS Trn A(B) Fuel Bldg Isol Dmprs.
b) 1VG04YA & B, SGTS Trn A(B) Pmp Rms Suct Dmprs.
c) 1VG05YA & B, SGTS Trn A(B) Fuel Bldg Suct Dmprs.
d) 1VG06YA & B, SGTS Trn A(B) ECCS Rms Suct Dmprs.

Standard: Green lights ON for 1VG02YA & B, 1VG04YA & B, 1VG05YA & B, and 1VG06YA & B.

Comment:

SAT_____UNSAT_____

___*___ Performance step: (Denote critical steps with an asterisk)

2.8.5 Open both 1VQ006A and B, CNMT Bldg Exh Outbd (Inbd) Isol Byp Vlvs.

Standard: Keylock switches placed in op[en and Red lights ON for 1VQ006A and 1VQ006B

Comment:

SAT_____UNSAT_____

__*____ Performance step: (Denote critical steps with an asterick)

2.8.6 Start SGTS Trn A Exh Fan, 0VG02CA.

Standard: OVG02CA will not have a flowpath until the next step is performed.

NOTE: Eventually get Annunciator Low Flow Alarm "SGTS A."

Comment:

SAT_____UNSAT_____

___*___ Performance step: (Denote critical steps with an asterick)

2.8.7 Place 1VG01YA, SGTS Trn A DW Prg Isol Dmpr control switch PURGE.

Standard: Keylock switch to Purge, GREEN light stays ON for 1VG01YA
Recognizes Isolation damper did not open
Reports to CRS that 'A' train SGTS cannot be used.

NOTE: CRS directs RO to use SGTS 'B" Train

Comment:

SAT_____UNSAT_____

_____ Performance step: (Denote critical steps with an asterick)

Closes 1VG01YA and STOPS SGTS 'A' fan

Standard: Closes 1VG01YA and STOPS SGTS 'A' fan

NOTE: Proceeds to Start SGTS 'B'

Comment:

SAT_____UNSAT_____

___*___ Performance step: (Denote critical steps with an asterisk)

2.8.6 Start SGTS Trn B Exh Fan, 0VG02CB.

Standard: OVG02CB will not have a flowpath until the next step is performed.

Comment: Eventually get Annunciator Low Flow Alarm "SGTS B."

Comment:

SAT_____UNSAT_____

___*___ Performance step: (Denote critical steps with an asterick)

2.8.7 Place 1VG01YB, SGTS Trn B DW Prg Isol Dmpr control switch to PURGE.

Standard: Keylock switch to PURGE, Red light ON for 1VG01YB

Comment:

SAT_____UNSAT_____

_____ Performance step: (Denote critical steps with an asterick)

2.8.8 Start both hydrogen mixing units per CPS No. 3316.01, CONTAINMENT COMBUSTIBLE GAS CONTROL (HG).

Standard: Verifies that both mixers are operating.

Comment:

SAT_____UNSAT_____

___*___ Performance step: (Denote critical steps with an asterisk)

2.8.9 **WHEN** CNMT pressure is ~ 0 psig,

THEN Open both 1VR002A and B, CNMT Bldg Sply Outbd Inbd) Isol Byp Vlvs.

Standard: Checks on Cnmt Pressure
Keylock switch to open, Red lights ON for 1VR002A and 1VR002B

NOTE: If containment pressure is > 0 psig then inform the applicant that pressure is approximately 0 psig.

Comment:

SAT_____UNSAT_____

Terminating cue: Containment Hydrogen Purge has been initiated with SGTS train 'B'.

CLINTON POWER STATION

JPM Worksheet B.1.d, Perform Emergency Containment Vent and Purge to Control Containment Hydrogen Levels per CPS No. 4411.06 - Alt Path

VERIFICATION OF COMPLETION

Job Performance Measure No. _____

Examinee's Name:

Examiner's Name:

Date performed:

Facility Evaluator:

Number of attempts:

Time to complete:

Question Documentation:

Question:_____
_____
_____

Response:_____
_____
_____
_____

Result: SAT or UNSAT

Examiner's signature and date: _____ _____

CLINTON POWER STATION

JPM Worksheet B.1.d

INITIATING CUE:

An emergency condition exists. Primary Containment hydrogen concentration is 1%. You are directed to vent and purge the Primary Containment using CPS No. 4411.06, EMERGENCY CONTAINMENT VENTING, PURGING, AND VACUUM RELIEF, Section 2.8, Containment Hydrogen Purge. No other sections of CPS No. 4411.06 have been performed.

Use VG Train 'A'

CLINTON POWER STATION

JPM Worksheet - B.1.e, Manually Perform a Group 1 Isolation - Alt Path

Facility: Clinton Power Station Task No:014200C679

Task Title: Manually Perform a Group 1 Isolation per CPS No. 4001.02 - Alt. Path

Job Performance Measure No:014200J008 Modified

K/A Reference:

K/A SYSTEM NUMBER	K/A NUMBER	Importance Rating RO	Importance Rating SRO
223002	A 4.02	3.9	3.8

Examinee: _____ NRC Examiner: _____

Facility Evaluator: _____ Date: _____

Method of testing:

Simulated Performance _____ Actual Performance ____X____

Classroom _____ Simulator _____X_____ Plant _____

READ TO THE EXAMINEE:

I will explain the initial conditions, which steps to simulate or discuss, and provide initiating cues. When you complete the task successfully, the objective for this job performance measure will be satisfied.

Initial Conditions:

Plant shutdown with the Main Steam system in operation with the MSIV's open.

Task Standard:

Manually isolates Group 1 per 4001.02 and isolates 'B' MSL using F098B

Required Materials: Panel key-lock switch keys

CLINTON POWER STATION

JPM Worksheet - B.1.e, Manually Perform a Group 1 Isolation - Alt Path

General References:

CPS No. 4001.02, AUTOMATIC ISOLATION
CPS No. 4001.02C001, AUTOMATIC ISOLATION CHECKLIST

Initiating Cue:

An emergency condition exists. A Group 1 isolation is required but failed to occur automatically. Manually perform ONLY a Group 1 isolation.

Time Critical Task: NO

Validation Time: 5 minutes

Simulator Set-up Conditions:

1. Any IC with the Main Steam system in operation with all Gp I isolation valves open.
2. MS08B: B21F022B to 100% (Open)
3. MS08F: B21F028B to 50% CONDITIONAL: when Handswitch taken to CLOSE
4. Override the CRVICS buttons.

START TIME _____

CLINTON POWER STATION

JPM Worksheet - B.1.e, Manually Perform a Group 1 Isolation - Alt Path

PERFORMANCE INFORMATION

_*__ Performance step: (Denote critical steps with an asterisk)
4001.02C001, Group #1 Main Steam Lines and Drains:
MANUALLY CLOSES THE FOLLOWING VALVES USING THEIR RESPECTIVE CONTROL SWITCHES:

1. 1B21-F022B
2. 1B21-F028B
3. 1B21-F022D
4. 1B21-F028D
5. 1B21-F022A
6. 1B21-F028A
7. 1B21-F022C
8. 1B21-F028C
9. 1B21-F067B
10. 1B21-F067D
11. 1B21-F067A
12. 1B21-F067C
13. 1B21-F016
14. 1B21-F019

Standard: Applicant places keys in key-lock switches and turns switch from AUTO to CLOSE for the following valves:

1. 1B21-F022B
2. 1B21-F028B
3. 1B21-F022D, verifies only GREEN light ON
4. 1B21-F028D, verifies only GREEN light ON
5. 1B21-F022A, verifies only GREEN light ON
6. 1B21-F028A, verifies only GREEN light ON
7. 1B21-F022C, verifies only GREEN light ON
8. 1B21-F028C, verifies only GREEN light ON

Applicant CLOSES the following Motor Operated Valves:

1. 1B21-F067B, verifies only GREEN light ON
2. 1B21-F067D, verifies only GREEN light ON
3. 1B21-F067A, verifies only GREEN light ON
4. 1B21-F067C, verifies only GREEN light ON
5. 1B21-F016, verifies only GREEN light ON
6. 1B21-F019, verifies only GREEN light ON

SAT_____ UNSAT_____

_____ Performance step: (Denote critical steps with an asterisk)

Applicant reports the following valves failed to close:

1. 1B21-F022B, recognizes RED light is ON
2. 1B21-F028B, recognizes RED and GREEN lights ON

Standard: Applicant reports the valves failed to close.

CUES: If the applicant requests directions from the SRO, direct the applicant to manually isolate the "B" Main Steam line.

If the applicant recommends using CRVICS manual initiation, inform the applicant not to use the pushbuttons as it will complicate plant conditions.

If applicant attempt to use CRVICS pushbuttons then the examiner as the SRO should stop applicant from using pushbuttons and inform applicant it will complicate plant conditions.

Comment:

SAT_____ UNSAT_____

__*___ Performance step: (Denote critical steps with an asterisk)

Closes motor operated isolation F098B

Standard: Applicant places key in the keylock switch and turns switch from OPEN to CLOSE. Green light ON for F098B

Note: Valve 1B21-F098B is a slow closing MOV. (1 - 2 minutes)

Comment:

SAT_____ UNSAT_____

_____ Performance step: (Denote critical steps with an asterisk)

Reports to CRS that 'B' Main Steam Line is isolated

Standard: Main Steam is isolated

Comment:

SAT_____ UNSAT_____

Terminating cue: Valve 1B21-F098B is CLOSED and Main Steam is Isolated.

STOP TIME _____

CLINTON POWER STATION

JPM Worksheet - B.1.e, Manually Perform a Group 1 Isolation - Alt Path

VERIFICATION OF COMPLETION

Job Performance Measure No. _____

Examinee's Name:

Examiner's Name:

Date performed:

Facility Evaluator:

Number of attempts:

Time to complete:

Question Documentation:

Question:_____
_____
_____

Response:_____
_____
_____
_____

Result: SAT or UNSAT

Examiner's signature and date: _____ _____

INITIATING CUE:

The plant is shut down with the Main Steam system in operation with the MSIVs open. An emergency condition exists. A Group 1 isolation is required but failed to occur automatically. Manually perform ONLY a Group 1 isolation.

CLINTON POWER STATION

JPM Worksheet - B.1.f, Inject to the RPV Using SX Through LPCI

Facility: Clinton Power Station Task No:014205C522

Task Title: Inject to the RPV using SX Through LPCI

Job Performance Measure No:014205J001

		Importance Rating	
K/A SYSTEM NUMBER	K/A NUMBER	RO	SRO
203000 - Reactor Low Water Level	A4.02	4.1	4.1

Applicant _____ NRC Examiner: _____

Facility Evaluator: _____ Date: _____

Method of testing:

Simulated Performance _____ Actual Performance ____x____

Classroom _____ Simulator _____x_____ Plant _____

READ TO THE EXAMINEE

I will explain the initial conditions, which steps to simulate or discuss, and provide initiating cues. When you complete the task successfully, the objective for this job performance measure will be satisfied.

Initial Conditions:

The plant is shutdown following an a LOCA. All ECCS is injecting, except RHR-B, due to pump failure.

Task Standard:

Inject Shutdown Service Water into the Reactor Vessel.

Required Materials: Panel key-lock switch key

CLINTON POWER STATION

JPM Worksheet - B.1.f, Inject to the RPV Using SX Through LPCI

General References:

CPS No. 4411.03, EOP INJECTION/FLOODING SOURCES, Appendix A, 2.0

Initiating Cue:

Inject to the Reactor Pressure Vessel using Shutdown Service Water through RHR 'B' per CPS No. 4411.03, Appendix A, step 2.0. LPCI has been injecting for greater than 10 minutes.

Time Critical Task: NO

Validation Time: 13 minutes

Simulator Set-up Conditions:

Shutdown IC with the Reactor de-pressurized.(IC-13).
Start Shutdown Service Water Pumps 'A', 'B', and 'C'.

START TIME:_____

PERFORMANCE INFORMATION

__*__ Performance step: (Denote critical steps with an asterisk)

2.1 Shut 1E12-F003B, RHR B Hx Outlet Valve. (Hold switch to close valve.)

Standard: Green light ON for 1E12-F003B.

Comment: Throttle valve - takes approximately 1 - 2 minutes to stroke.

SAT_____UNSAT_____

__*__ Performance step: (Denote critical steps with an asterisk)

2.2 Shut 1E12-F048B, RHR B Hx Bypass Valve. (Hold switch to close valve.)

> NOTE
>
> 1E12-F048B response to ECCS logic signals:
>
> ° LPCI: OPEN for 10 minutes, then can reposition.
> ° CNMT Spray: CLOSE, reset needed to reposition.
> ° LPCI & CNMT Spray: Cycles OPEN/CLOSE until 10 min. LPCI timer times out.

Standard:

Applicant turns switch to CLOSE 1E12-F048B, and verifies Green light ON.

Note: This is a throttle valve and takes several minutes to close.

Comment:

SAT_____UNSAT_____

_____ Performance step: (Denote critical steps with an asterisk)

2.3 Verify SX running per CPS No. 3211.01, SHUTDOWN SERVICE WATER (SX).

Standard:

Applicant verifies that Division II SX pump is running.

- SX "1B" pump red light is ON.
- SX discharge pressure is between 150 and 175 psig.
- PSW to SX isolation valve, SX014B, is closed, GREEN light ON.
- SX pump room "B" supply fan is running, RED light is ON.
- SX pump minimum flow DG 1B HX outlet valve, SX 63B is open.

Cue: If asked, inform the applicant to defer isolating non-essential SX loads.

If asked, inform the applicant there is no need to cross-connect Div I and Div II SX.

Notes: Applicant is not required to refer to CPS No. 3211.01 (SX) to verify SX running.

SX pressure may be slightly greater than 180 psig.

Comment:

SAT_____UNSAT_____

_____ Performance step: (Denote critical steps with an asterisk)

2.4 Verify SHUT:

- 1E12-F024B, RHR B Test Valve To Suppr Pool.
- 1E12-F014B, SSW Inlet RHR B Hx Valve.
- 1E12-F053B, RHR B To Feedwater S/D Cooling Rtrn Vlv.
- 1E12-F023, RHR B Supp To Rx Head Spray Valve.
- 1E12-F028B, RHR B To CNMT Spray B Shutoff Vlv.

Standard: Applicant verifies Green lights ON for:

- 1E12-F024B, RHR B Test Valve To Suppr Pool.
- 1E12-F014B, SSW Inlet RHR B Hx Valve.
- 1E12-F053B, RHR B To Feedwater S/D Cooling Rtrn Vlv.
- 1E12-F023, RHR B Supp To Rx Head Spray Valve.
- 1E12-F028B, RHR B To CNMT Spray B Shutoff Vlv.

Comment:

SAT_____UNSAT_____

____ Performance step: (Denote critical steps with an asterisk)

2.5 Verifies open 1E12-F027B, RHR B To CNMT Outbd Isol Valve.

Standard: Applicant verifies 1E12-F027B, is open, verifies Red light ON.

Comment:

SAT_____UNSAT_____

__*__ Performance step: (Denote critical steps with an asterisk)

2.6 Open 1E12-F096, Service Water To RHR Blocked Supp Vlv. (Key operated switch)

Standard: Applicant inserts key into keylock and turns switch to OPEN 1E12-F096, verifies Red light ON.

Comment: Long stroke time approximately 1 - 2 minutes.

SAT_____UNSAT_____

__*__ Performance step: (Denote critical steps with an asterisk)

2.7 Open 1E12-F094, Service Water To RHR B Supp Vlv.

Standard: Applicant turns switch to OPEN 1E12-F094, verifies Red light ON.

Comment:

SAT_____UNSAT_____

__*__ Performance step: (Denote critical steps with an asterisk)

2.8 Open 1E12-F042B, LPCI Fm RHR B Shutoff Valve

Standard: Applicant turns switch to OPEN 1E12-F042B, verifies Red light ON.

Comment:

SAT_____UNSAT_____

_____ Performance step: (Denote critical steps with an asterisk)

2.9 Monitor SX flow on flow indicator 1E12-R603B, RHR Pump B Flow.

Standard: Verifies SX flow on 1E12-F603B

Note: SX flow rises to approximately 1000 gpm on instrument

Comment:

SAT _____ UNSAT _____

Terminating cue: Shutdown Service Water is being injected into the Reactor Vessel.

SAT _____ UNSAT _____

STOP TIME: _____

CLINTON POWER STATION

JPM Worksheet - B.1.f, Inject to the RPV Using SX Through LPCI

VERIFICATION OF COMPLETION

Job Performance Measure No. _____

Examinee's Name:

Examiner's Name:

Date performed:

Facility Evaluator:

Number of attempts:

Time to complete:

Question Documentation:

Question: _____

_____

_____

_____

Response:_____

_____

_____

_____

Result: SAT or UNSAT

Examiner's signature and date: _____ _____

CLINTON POWER STATION

JPM Worksheet - B.1.f, Inject to the RPV Using SX Through LPCI

Initial Conditions:

The plant is shutdown following an a LOCA. All ECCS is injecting, except RHR-B, due to pump failure.

Initiating Cue:

Inject to the Reactor Pressure Vessel using Shutdown Service Water through RHR 'B' per CPS No. 4411.03, Appendix A, step 2.0. LPCI has been injecting for greater than 10 minutes.

JPM Worksheet B.1.g Defeat Fuel Bldg Vent Interlocks

Facility: Clinton Task No: _____

Task Title: Defeat Fuel Building Ventilation Interlocks After High Radiation Isolation.

Job Performance Measure No: NEW K/A Reference: 288000A204

Applicability: RO__X___ SRO_X__

Examinee: _____ NRC Examiner: _____

Facility Evaluator: _____ Date: _____

Method of testing:

Simulated Performance _____X_____ Actual Performance _____

Classroom _____ Simulator _____ Plant __X___

READ TO THE EXAMINEE

I will explain the initial conditions, which steps to simulate or discuss, and provide initiating cues. When you complete the task successfully, the objective for this job performance measure will be satisfied.

Initial Conditions:

The Fuel Building Ventilation system (VF) has isolated due to high radiation. EOP-8, Secondary Containment Control, was entered for high VF Exhaust radiation levels. The VF exhaust radiation is currently 9 Mr/hr.

Task Standard:

The VF interlocks have been defeated.

Required Materials:

Controlled procedures, tools, & equipment are located in the EOP MCR Supply Cabinet.
EOP Tool Bag.

General References:

CPS 4410.00C011, DEFEATING VF INTERLOCKS.

Initiating Cue:

The Fuel Building Ventilation system (VF) has isolated due to high radiation. The VF exhaust radiation is currently 9 Mr/hr. You are instructed to **SIMULATE** defeating the VF Interlocks in preparation for restarting the VF system. Examiner provides Applicant with a copy of CPS 4410.00C011, Defeating VF Interlocks.

Time Critical Task: NO

Validation Time: 10 minutes.

Simulator Set-up Conditions: None

Start Time: _____

PERFORMANCE INFORMATION

__*___ Performance step: (Denote critical steps with an asterisk)
Step 1 Obtain EOP tool bag identified for defeating the VF Interlocks in EOP MCR Supply Cabinet.

STANDARD: Applicant simulates obtaining EOP tool bag identified for defeating the VF Interlocks in EOP MCR Supply Cabinet.

CUE: **Have Applicant actually obtain EOP TRAINING Bag.**

SAT _____ UNSAT _____

NOTE
Steps 2 and 3 may be performed in any order.

WARNING
Live electrical contacts in panels.
Breaker contacts may be energized.

__*___ Performance step: (Denote critical steps with an asterisk)
Step 2 At panel 1H13-P861, Bay C, simulate removing relay 1UAY-VG508A (LN). (Third row up, second relay from the left) (Step 3.1, CPS 4410.00C011)

STANDARD: Applicant has simulated removing relay 1UAY-VG508A (LN).

COMMENT: The hold down clip must be lifted up and the relay pulled out.

SAT _____ UNSAT _____

__*___ Performance step: (Denote critical steps with an asterisk)
Step 3 At panel 1H13-P851, Bay C, remove relay 1UAY-VG511A (MD). (Second row up, fourth relay from the left) (Step 3.2, CPS 4410.00C011)

STANDARD: Applicant has simulated removing relay 1UAY-VG511A (MD).

COMMENT: The hold down clip must be lifted up and the relay pulled out.

SAT _____ UNSAT _____

Terminating cue: Operator reports that the relay are removed per CPS 4410.00C011.

STOP Time _____

VERIFICATION OF COMPLETION

Job Performance Measure No. _____

Examinee's Name:

Examiner's Name:

Date performed:

Facility Evaluator:

Number of attempts:

Time to complete:

Question Documentation:

Question:_____

_____

_____

_____

Response:_____

_____

_____

_____

_____

Result: SAT or UNSAT

Examiner's signature and date: _____ _____

APPLICANT'S COPY

Initial Conditions:
The Fuel Building Ventilation system (VF) has isolated due to high radiation. EOP-8, Secondary Containment Control, was entered for high VF Exhaust radiation levels. The VF exhaust radiation is currently 9 Mr/hr.

Initiating Cue:
The Fuel Building Ventilation system (VF) has isolated due to high radiation. The VF exhaust radiation is currently 9 Mr/hr. You are instructed to **SIMULATE** defeating the VF Interlocks in preparation for restarting the VF system. Examiner provides Applicant with a copy of CPS 4410.00C011, Defeating VF Interlocks.

DEFEATING VF INTERLOCKS

SCOPE OF REVISION:

- Editorial and administrative updates to reflect implementation of BWROG Severe Accident Guidelines (EPG/SAG Rev. 1), and restoration guidelines. Revision marks not used.
- No technical changes made in this revision.
- ITR: J. Smith

CONTINUOUS USE

ORIGINATOR: *Thomas J. Landin*

CLASS CODE: *SNND1* APPROVAL DATE: *DEC 10 1998*

CHANGE NO.	DATE	PAGES
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DEFEATING VF INTERLOCKS

STARTED: _____/_____ (DATE/TIME)

1.0 GOAL

Allow restart/continued use of Fuel Building Ventilation (VF) after isolation and when VF Exhaust < 10 mR/hr.

> NOTE
>
> Controlled procedures, tools, & equipment which support Section 3.0 are located in the EOP Supply Cabinet (MCR).

2.0 SPECIAL EQUIPMENT/TOOLS REQUIRED

EOP Tool Bag (1)

> **WARNING**
>
> Live electrical contacts in panels.
>
> Breaker contacts may be energized.

3.0 INSTRUCTIONS

INITIALS

Div 1: 1H13-P861

3.1 At panel 1H13-P861, Bay C, remove relay 1UAY-VG508A (LN). (Third row up, second relay from the left) _____

DIV 2: 1H13-P851

3.2 At panel 1H13-P851, Bay C, remove relay 1UAY-VG511A (MD). (Second row up, fourth relay from the left) _____

4.0 **FINAL CONDITIONS**

4.1 The following VF components RPV Level 2 and High Drywell Pressure Isolation/Trips will be defeated:

- VF Exhaust Fans, 1VF04CA/B
- VF Supply Fans, 1VF03CA/B
- Secondary Containment Isolation Dampers, 1VF04Y, 1VF06Y, 1VF07Y, and 1VF09Y

4.2 Standby Gas Treatment (VG) Automatic Initiation on Level 2 and High Drywell Pressure will be defeated.

5.0 **REFERENCES**

5.1 E02-1NB99, Sh. 209
5.2 E02-1VF99, Sh. 1-6
5.3 E02-1VG99, Sh. 5, 8, 11, 14, 15
5.4 E03-1P851, Sh. 6
5.5 E03-1P861, Sh. 8

6.0 **ATTACHMENTS**

Panel Location Map

COMMENTS/DEFICIENCIES

_____

_____

_____

NOTE

Completed checklist should be returned to the CRS or the ERO until restoration under CPS No. 1005.09C001 or the Emergency Plan Recovery Phase is to be performed.

EOP supply bag and any removed material should be returned to the EOP Supply Cabinet folders until restoration is required.

Performed by: _____
(Print) (Initials) (Date)

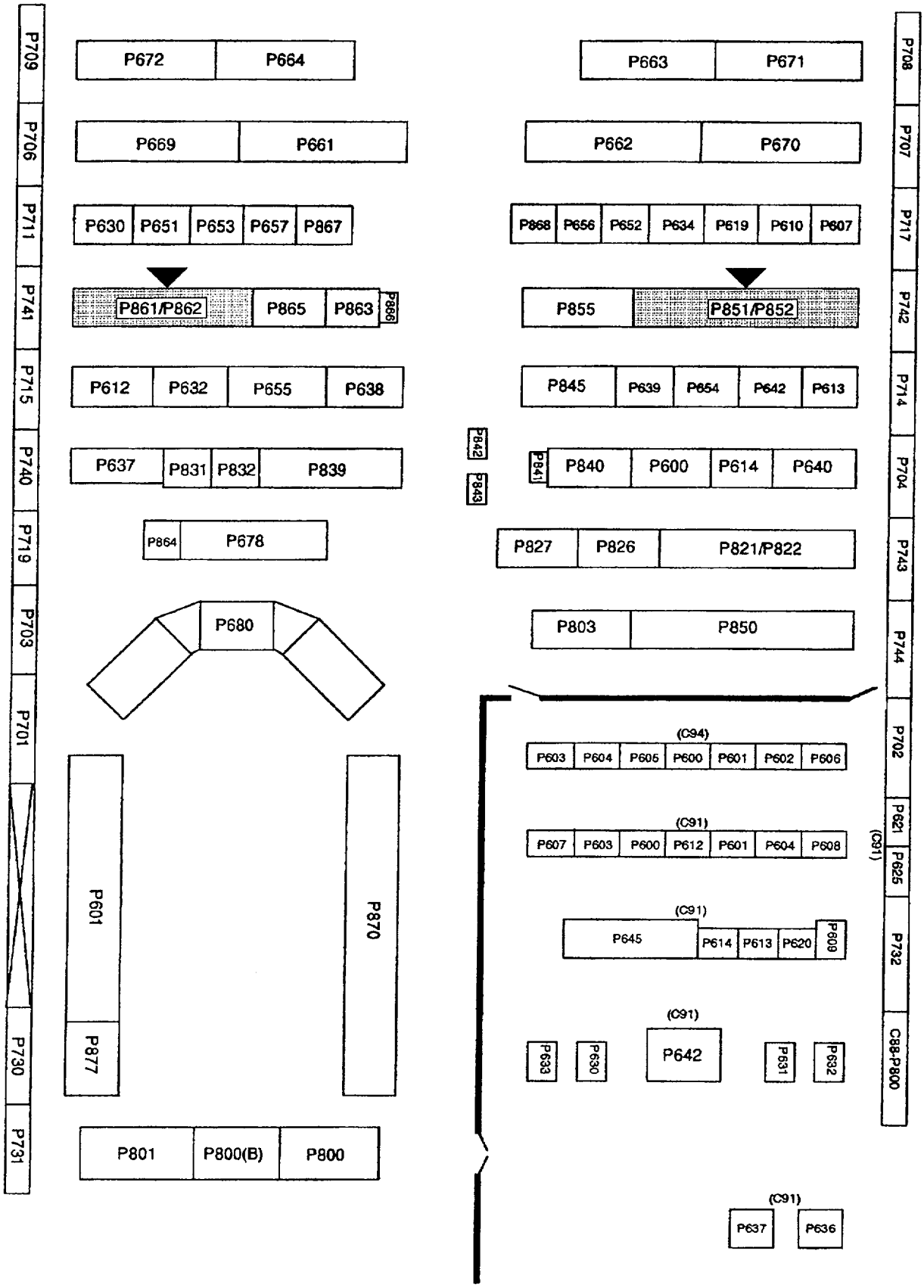
Performed by: _____
(Print) (Initials) (Date)

Performed by: _____
(Print) (Initials) (Date)

REVIEW AND APPROVAL

Shift Manager/Control Room Supervisor: _____
(Signature) (Date)

ATTACHMENT: PANEL LOCATION MAP



Facility: Clinton Task Nos: 044200C533; 014200C516; 041298C511

Task Title: Manually Valve In ADS B/U Air Bottles

Job Performance Measure No: 044200J003 K/A Reference: 2180000A203

Applicability: RO_X___ SRO_X___

Examinee: _____ NRC Examiner: _____

Facility Evaluator: _____ Date: _____

Method of testing:

Simulated Performance _____X_____ Actual Performance _____

Classroom _____ Simulator _____ Plant __X___

READ TO THE EXAMINEE
I will explain the initial conditions, which steps to simulate or discuss, and provide initiating cues. When you complete the task successfully, the objective for this job performance measure will be satisfied.

Initial Conditions:
There has been a station blackout. CPS 4200.01, Loss of AC Power, has been entered and recovery actions are in progress.

Task Standard:
MOV 1IA012A, East Gas Control Boundary (AB 762') and MOV 1IA013A, West above Div 1 H_2O_2 skid (FB 781') have been simulated manually opened.

Required Materials: None

General References:
CPS 4200.01, Loss of AC Power

Initiating Cue:
Due to station blackout, you are directed to place the ADS Backup Air Bottles in service per Step 4.4.8, CPS 4200.01, Loss of AC Power. Examiner to provide Applicant with a copy of CPS 4200.01.

Time Critical Task: NO

Validation Time: ~ 15 minutes.

Simulator Set-up Conditions: None

Start Time: _____

PERFORMANCE INFORMATION

_____ Performance step: (Denote critical steps with an asterisk)
Step 1 Applicant obtains CPS 3101.01, Main Steam.

STANDARD: Applicant obtains CPS 3101.01, Main Steam.

Note to Examiner:
The Loss of AC Power procedure makes a reference to CPS 3101.01. The step of interest is Step 8.2.3. The Applicant does not need to refer to this procedure to complete the task. All of the steps are in the Loss of AC power procedure.

CUE: When Applicant obtains a copy of CPS 3101.01, Main Steam, Examiner to provide Applicant with a copy.

SAT _____ UNSAT _____

___*___ Performance step: (Denote critical steps with an asterisk)
Step 2 Locate and manually OPEN valve 1IA012A (East Gas Control Boundary (AB 762')) [Step 4.4.8, CPS 4200.01]

STANDARD: Applicant locates and simulates manually opening the valve. The Applicant simulates engaging the valve handwheel by pulling the "declutch" lever down. The Applicant then simulates opening the valve by rotating the handwheel counter-clockwise (if the Applicant was facing the handwheel).

CUE: Inform the Applicant that the declutch lever has been pulled down and the handwheel has been turned counter-clockwise (if the operator was facing the handwheel). Inform the Applicant that the valve has opened.

Notes to Examiner:
1. Both the lever and handwheel have arrows indicating the correct operating direction.
2. The "declutch" lever does not need to be held in position while turning the handwheel, once the valve opening mechanism is engaged.
3. The valve is a rising stem valve.
4. The Applicant must simulate climbing on pipes and supports to reach the valve operator to simulate manually opening the valve.

COMMENT:

SAT _____ UNSAT _____

___*___ Performance step: (Denote critical steps with an asterisk)
Step 3 Locate and manually OPEN valve 1IA013A, West above Div 1 H_2O_2 skid (FB 781')). [Step 4.4.8, CPS 4200.01]

STANDARD: Applicant locates and simulates manually opening the valve. The Applicant simulates engaging the valve handwheel by pulling the "declutch" lever down. The Applicant then simulates opening the valve by rotating the handwheel counter-clockwise (if the Applicant was facing the handwheel).

CUE: Inform the Applicant that the declutch lever has been pulled down and the handwheel has been turned counter-clockwise (if the operator was facing the handwheel). Inform the Applicant that the valve has opened.

Notes to Examiner:
1. Both the lever and handwheel have arrows indicating the correct operating direction.
2. The "declutch" lever does not need to be held in position while turning the handwheel, once the valve opening mechanism is engaged.
3. The valve is a rising stem valve.
4. The Applicant must simulate climbing on pipes and supports to reach the valve operator to simulate manually opening the valve.

COMMENT:

SAT _____ UNSAT _____

Terminating cue: The ADS Back up air bottles have been manually valved in.

Stop Time _____

VERIFICATION OF COMPLETION

Job Performance Measure No. _____

Examinee's Name:

Examiner's Name:

Date performed:

Facility Evaluator:

Number of attempts:

Time to complete:

Question Documentation:

Question:_____

_____

_____

_____

Response:_____

_____

_____

_____

_____

Result: SAT or UNSAT

Examiner's signature and date: _____ _____

APPLICANT'S COPY

Initial Conditions:
There has been a station blackout. CPS 4200.01, Loss of AC Power, has been entered and recovery actions are in progress.

Initiating Cue:
Due to station blackout, you are directed to place the ADS Backup Air Bottles in service per Step 4.4.8, CPS 4200.01, Loss of AC Power. Examiner to provide Applicant with a copy of CPS 4200.01.

CLINTON POWER STATION
JPM Worksheet - B.2.b
Cross Connect DC Distribution Panels 1E and 1F per CPS No. 3503.01

Facility: Clinton Power Station Task No:041263J001

Task Title: Cross Connect DC Distribution Panels 1E and 1F per CPS No. 3503.01

Job Performance Measure No:041263J001

K/A Reference:

263000	A4.01	3.3	3.5

Examinee: _____ NRC Examiner: _____

Facility Evaluator: _____ Date: _____

Method of testing:

Simulated Performance ____X____ Actual Performance _____

Classroom _____ Simulator _____ Plant __X__

READ TO THE EXAMINEE

I will explain the initial conditions, which steps to simulate or discuss, and provide initiating cues. When you complete the task successfully, the objective for this job performance measure will be satisfied.

Initial Conditions:

100% power, 1E battery charger is to be tagged out for corrective maintenance.

Task Standard:

Cross Connect 125 VDC Distribution Panels 1E and 1F, with 1F supplying, per CPS No. 3503.01, Section 8.2.6.3.

CLINTON POWER STATION
JPM Worksheet - B.2.b,
Cross Connect DC Distribution Panels 1E and 1F per CPS No. 3503.01

Required Materials: Provide the applicant with a copy of 3503.01.

General References:

CPS No. 3503.01, BATTERY AND DC DISTRIBUTION

Initiating Cue:

You are to cross-connect DC Distribution Panels 1E and 1F with 1F supplying per CPS No. 3503.01, Section 8.2.6.3. Examiner to provide the Applicant with a copy of CPS 3503.01.

Time Critical Task: YES/**NO**

Validation Time: 8 minutes

Simulator Set-up Conditions:

None

Start Time_____

PERFORMANCE INFORMATION

CAUTION
Do not exceed tie breakers amp rating of 225 amps.

NOTE
DC MCC 1E and 1F Tie Breakers must both be ON to complete the crosstie.

_____ Performance step: (Denote critical steps with an asterisk)

8.2.6.3 Verify 1E and 1F voltages are approximately equal.

Standard: The operator locates and reads the voltage indicated on 125 VDC Distribution Panels 1E and 1F.

Cue: The voltages are as indicated on the meters.

Comment: If the panel(s) is/are de-energized due to actual plant conditions, inform the applicant that the voltages are approximately 134 VDC.

SAT_____UNSAT_____

___*___ Performance step: (Denote critical steps with an asterisk)

8.2.6.3 b) Place the following breakers to ON:
1) 125 VDC Dist Pnl 1F tie Breaker at DC MCC 1E cub 6B
2) 125 VDC Dist Pnl 1E tie Breaker at DC MCC 1F cub 7A

Standard: The operator positions the breaker control handle in the UP position at DC MCC 1E cub 6B.
The operator rotates the breaker control handle counterclockwise to the ON position at DC MCC 1F cub 7A.

Cue: The breaker control handle is in the UP position (at DC MCC 1E cub 6B).
The breaker control handle rotates counterclockwise and is in the ON position (at DC MCC 1F cub 7A)

Comment: These breakers may be positioned in either sequence.

SAT_____UNSAT_____

_____Performance step: (Denote critical steps with an asterisk)

8.2.6.3 c) Verify the breakers in the previous sub-step did not trip when closed:
1) 125 VDC Dist Pnl 1F tie Breaker at DC MCC 1E cub 6B
2) 125 VDC Dist Pnl 1E tie Breaker at DC MCC 1F cub 7A

Standard: The operator verifies the breakers at DC MCC 1E cub 6B and DC MCC 1F cub 7A are CLOSED.

Cue: The breakers at DC MCC 1E cub 6B and DC MCC 1F cub 7A are CLOSED.

Comment:

SAT_____UNSAT_____

CAUTION

The distribution panel 1E supply breaker is located **INSIDE** the distribution panel on DC MCC 1E cub 4A.

___*___Performance step: (Denote critical steps with an asterisk)

8.2.6.3 d) Place 125 VDC Dist Pnl 1E Supply Breaker in OFF at DC MCC 1E cub 4A.

Standard: The operator opens the 1E distribution panel door and moves the supply breaker handle to the DOWN position.

Cue: The 1E supply breaker handle moves downward and latches in the DOWN position.

Comment:

SAT_____UNSAT_____

Terminating cue:

DC Distribution Panels 1E and 1F are cross-tied with Distribution Panel 1F supplying.

CLINTON POWER STATION
JPM Worksheet - B.2.b
Cross Connect DC Distribution Panels 1E and 1F per CPS No. 3503.01

VERIFICATION OF COMPLETION

Job Performance Measure No. _____

Examinee's Name:

Examiner's Name:

Date performed:

Facility Evaluator:

Number of attempts:

Time to complete:

Question Documentation:

Question:_____
_____
_____

Response:_____
_____
_____
_____

Result: SAT or UNSAT

Examiner's signature and date: _____ _____

Initial Conditions:
100% power, 1E battery charger is to be tagged out for corrective maintenance.

Initiating Cue:
You are to cross-connect DC Distribution Panels 1E and 1F with 1F supplying per CPS No. 3503.01, Section 8.2.6.3. Examiner to provide the Applicant with a copy of CPS 3503.01.

JPM Worksheet B.2.c

Transfer of CCW Temp Reg. Valve from Auto To Manual Hand Wheel per CPS No. 3203.01

Facility: Clinton Power Station Task No: 044208C506 _____

Task Title: Transfer of CCW Temp Reg. Valve from Auto To Manual Hand Wheel_____

Job Performance Measure No: New K/A Reference: 400000A203 _____

Applicability: RO_X_ SRO_X_

Examinee: _____ NRC Examiner: _____

Facility Evaluator: _____ Date: _____

Method of testing:

Simulated Performance _____X_____ Actual Performance _____

Classroom _____ Simulator _____ Plant __X____

READ TO THE EXAMINEE

I will explain the initial conditions, which steps to simulate or discuss, and provide initiating cues. When you complete the task successfully, the objective for this job performance measure will be satisfied.

Initial Conditions:

CCW Heat Exchanger 1A Valve 1WS018A, Temperature Controller 1TIC-CC045 has failed to maintain CC temperature and is in Manual at 1PA05J. The B CCW Heat Exchanger is out of service for tube cleaning.

Task Standard:

CCW temperature controlled by 1WS018A Manual Handwheel

Required Materials: None

General References:

CPS No. 3203.01 Component Cooling Water (CC)

JPM Worksheet B.2.c

Transfer of CCW Temp Reg. Valve from Auto To Manual Hand Wheel per CPS No. 3203.01

Initiating Cue:

CCW Heat Exchanger 1A Valve 1WS018A, Temperature Controller 1TIC-CC045 has failed to maintain CC temperature and is in Manual at 1PA05J. The B CCW Heat Exchanger is out of service for tube cleaning. Place the A CCW Temp Reg Valve in Manual and Control CC Temperature. Examiner to provide Applicant with a copy of CPS 3203.01.

Time Critical Task: NO

Validation Time: 8 minutes

Start Time:_____

PERFORMANCE INFORMATION

NOTE: Provided in Initial Conditions - Step 8.1.4.1.1, 1TIC-CC045 in Manual at 1PA05J

___*___ Performance step: (Denote critical steps with an asterisk)

Step 8.1.4.1.2 Isolate Instrument Air to 1WS018A by closing the following valves

a) 1IA190, 1WS018A Instrument Air Inlet Block Valve
b) 1IA842A, 1WS018A IA Inlet Isol Valve

Standard: a) Applicant indicates turning handwheel for valve 1IA190 clockwise
b) Applicant indicates turning handwheel for valve 1IA842A clockwise.

Cue: After several turns clockwise cue valve CLOSED.

Comment:

SAT_____UNSAT_____

___*_____ Performance step: (Denote critical steps with an asterisk)

Step 8.1.4.1.3 Equalize pressure across the diaphragm by opening 1TYCC045EV, diaphragm equalizing valve.

Standard: Applicant indicates turning handwheel for valve 1TYCC045EV counter-clockwise.

Cue: After several turns counter-clockwise cue valve OPEN.

Comment: Procedure Cautions, Operation of 1WS018A in the MANUAL HANDWHEEL mode, without equalizing pressure across the diaphragm, will prevent closing the valve and may damage the diaphragm.

SAT_____UNSAT_____

__*_____ Performance step: (Denote critical steps with an asterisk)

Step 8.1.4.1.4 Insert the pin into the valve actuator which places the 1WS018A in the Manual handwheel Mode.

NOTE: Label on valve 1WS018A says "Engage: align notch in pointer to hole in gear and push ring."

Standard: Applicant indicates inserting pin into valve actuator for 1WS018A.

Cue: Inform the Applicant that the notch has been aligned and the ring (pin) has been pushed in.

Comment:

SAT_____UNSAT_____

_____ Performance step: (Denote critical steps with an asterisk)

Coordinates open of 1WS018A with MCR to reduce CC temperature by opening valve.

Cue: As MCR respond that CC temperature is on a slow trend down following opening of 1WS018A

Standard: Applicant operates 1WS018A handwheel counter-clockwise to open valve. Applicant contacts Main Control Room to adjust CC temperature.

Comment:

SAT_____UNSAT_____

Terminating cue: 1WS018A in being operated in the Manual Handwheel Mode.

SAT_____UNSAT_____

Stop Time_____

JPM Worksheet B.2.c

Transfer of CCW Temp Reg. Valve from Auto To Manual Hand Wheel per CPS No. 3203.01

VERIFICATION OF COMPLETION

Job Performance Measure No. _____

Examinee's Name:

Examiner's Name:

Date performed:

Facility Evaluator:

Number of attempts:

Time to complete:

Question Documentation:

Question:_____

_____

_____

Response:_____

_____

_____

_____

Result: SAT or UNSAT

Examiner's signature and date: _____ _____

JPM Worksheet B.2.c

Transfer of CCW Temp Reg. Valve from Auto To Manual Hand Wheel per CPS No. 3203.01

Initial Conditions:

CCW Heat Exchanger 1A Valve 1WS018A, Temperature Controller 1TIC-CC045 has failed to maintain CC temperature and is in Manual at 1PA05J. The B CCW Heat Exchanger is out of service for tube cleaning.

Initiating Cue:

The B CCW Heat Exchanger is out of service for tube cleaning.
CCW Heat Exchanger 1A valve 1WS018A, Temperature Controller 1TIC-CC045 has failed to maintain CC temperature and is in Manual at 1PA05J. Place the A CCW Temp Reg. Valve in the Manual Handwheel Mode of Operation.
Examiner to provide Applicant with a copy of CPS 3203.01.

FINAL AS-ADMINISTERED SCENARIOS

FOR CLINTON THE WEEK OF JUNE 12, 2000

Facility: CLINTON POWER STATION Scenario No.: 01 Op-Test No.: 2000301

Examiners: _____ Operators: _____

Objectives: Exercise EOP-1A, ATWS RPV Control. Evaluate operators while: 1) reducing power with FCVs to support MSIV stroke testing, 2) conduct MSIV stroke test, 3) responding to Rx Water Level Channel "A" failing high, 4) responding to a main turbine lube oil temperature controller failure causing high lube oil temperature, 5) SRO response to an inoperable Div 2 SX pump, 6) responding to a Condenser Overflow Valve failing open, 7) responding to a loss of "B" Service Air compressor with a small instrument air leak, 8) responding to one MSIV drifting shut due to the instrument air leak, 9) responding to a control rod drifting in due to the instrument air leak, 10) responding to an ATWS (hydraulic lock), and 10) SLC fails to inject when initiated (failed Squibb valve)

Initial Conditions: 100% power, NOP, NOT, EOC (150 days of continuous operation) Div I EDG is out of service

Turnover: Last shift power was reduced to 78% in preparation for conducting MSIV stroke testing. Div I EDG is out of service. Maintenance is replacing some leaking relief valves (1DG005 A/B) on the air start system. It has been out of service for 1 day and is expected to be tested towards the end of this shift. New fuel is being loaded into the new fuel storage vault. Reduce power to 75% or 45% FCV position. As soon as power is reduced, conduct the MSIV stroke test, CPS No. 9031.10, MSIV Stroke Test. Operators are standing by to support the surveillance.

Event No.	Malf. No.	Event Type*	Event Description
1		R	Reduce power to 75% (or 45% FCV position)
2		N	Conduct MSIV stroke test (CPS No. 9031.01)
3		I	Rx Water Level Channel "A" fails to ~ 40"
4		I	Main turbine lube oil temperature controller failure causes high lube oil temperature
5		C	Report from Maintenance that Div 2 SX pump bearing has failed
6		C	Condenser Emergency Overflow Valve (1CD020) fails open
7		C	Loss of Operating SA Compressor & small IA leak
8		C	One MSIV drifts off full open seat due to IA leak
9		C	Rod drift due to IA leak
10		M	ATWS - Hydraulic lock
11		C	SLC fails to inject

* (N)ormal, (R)eactivity, (I)nstrument, (C)omponent, (M)ajor

Event No.: _1_ (Reactivity) Power Reduction to 75% with FCV in preparation for MSIV Stroke Test

Time	Position	Applicant's Actions or Behavior
	SRO	• CREW BRIEF ON REACTIVITY MANAGEMENT COMPLETED PRIOR TO CREW TAKING SHIFT. POWER DECREASE IAW CPS 3005.01, UNIT POWER CHANGES. • DIRECT RO TO REDUCE POWER TO 75% BY LOWERING FLOW W/ FCV. MINIMUM FCV POSITION IS 45% OPEN. • NOTE: ~950MWe = 100% = 2894MWth. • Notify Load Dispatcher of load drop.
	RO	REDUCE REACTOR POWER BY ADJUSTING RX RECIRC FLOW VIA FCV OPERATION. MINIMUM FCV POSITION IS 45% OPEN.
	BOP	MONITOR PLANT AS DIRECTED BY SRO.

Event No.: _2_ (Normal Evolution) CONDUCT MSIV STROKE TEST: NOTE - 1st inboard MSIV test will be completed without any problems.

Time	Position	Applicant's Actions or Behavior
	SRO	Implement CPS 9031.10, Main Steam Line Isolation Valve Channel Functional AND DIRECT OPERATOR ACTIONS.
	BOP	VERIFY TEST PREREQUISITE CONDITIONS OBTAIN SHIFT SUP PERMISSION TO PERFORM TEST MSL A/B/C/D BYPASS SWITCH IN NORMAL ON 1H13-P601 NS4 A/B/C/D BYPASS SWITCH IN NORMAL ON 1H13-P661-664 (**Note to Examiner** - P661-664 is not simulated. The Applicant will probably check that annunciator windows 5066, 5-D & 5-E and 5067, 5-D & 5-E are not alarming to complete this step.) NOTIFY STA OF GETARS TRIPS OF CHAN 147-154 PLACE MSL A INBD MSIV CONTROL SWITCH TO THE CLOSE TEST POSITION. DEPRESS AND HOLD TEST PUSHBUTTON, MSL A INBD MSIV TEST. VERIFY BOTH RED AND GREEN LIGHTS FOR A INBD MSIV ARE ON. ALARM DIV 1 OR 4 MSIV CL TRIP ANNUNCIATES. COMPUTER POINT B21-NC047 INDICATES TRIPPED (or Logic 1 State) AFTER ALARM IS RECEIVED RELEASE THE TEST PUSHBUTTON AND VERIFY RED LIGHT ON GREEN LIGHT OFF ALARM DIV 1 OR 4 MSIV CL TRIP CLEARS. COMPUTER POINT B21-NC047 INDICATES RESET (or Logic 0 State) PLACE THE MSL A INBD MSIV CONTROL SWITCH FOR MSIV 1B21-FO22A TO AUTO. PERFORM **INDEPENDENT VERIFICATION** OF SWITCH POSITION BEFORE BEGINNING "B" INBOARD MSIV. NOTE: THE STEPS FOR THE "B" INBOARD MSIV ARE THE SAME.
	RO	MONITOR PLANT PARAMETERS AS DIRECTED BY SRO.
	CUE	When 2nd MSIV is being tested AND when directed by Chief Examiner, insert Event 3, Rx Water Level Channel "A" Fails to ~ 40".

Event No.: _3_ (RO-I) Rx Water Level Channel "A" Fails ~ 40". When 2nd inboard MSIV is being tested, then event 3 will be inserted.

Time	Position	Applicant's Actions or Behavior
	CUE	Fail Rx Water Level Channel "A" to ~ 40" when 2ND MSIV is being tested.
	RO	Report RPV Level is slowly decreasing. Identify that 1C34-N004A indication is increasing and indications on channels B & C are decreasing. Take actions in Annunciator Response Procedure for RPV Hi-Low Level Alarm (Low @ 30.8 ") (Alarm window 5002-2Q) Take actions in RPV Water Level Signal Failure (Alarm window 5002-2P) - **Note to Examiner** - Alarms when 1 of 3 level indicators 1C34-N004A, B, or C reading 7.5" different from the other channels. When directed, swap feedwater level controls to an operable channel. Take manual control of TDRFPs (if necessary) and restore level to ~ 36 inches
	SRO	Directs BOP to stop MSIV testing. Directs RO to swap feedwater level controls to an operable channel. Directs RO to take manual control of TDRFPs (if needed) and restore level to ~ 36 inches IAW CPS 3103.01, Feedwater, Section 8.3.13, High/Low RPV Level. Directs RO to carry out actions in Annunciator Response Procedures for RPV Hi-Low Level Alarm (Low @ 30.8 ") (5002-2Q) and RPV Water Level Signal Failure (5002-2P). SRO may enter CPS 4005.01, Loss of Feedwater Heating, due to level transient. Contacts Maintenance to prepare work order to troubleshoot. **Note to Examiner** - Failure of channel "A" may lead to a High Level Trip Signal.
	BOP	Monitor plant parameters as directed by SRO.
	CUE	After operable channel has been selected & RPV level stabilized AND when directed by Chief Examiner, insert Event 4 - Main Turbine Lube Oil high temperature.

Event No.: _4_ (BOP-I) MAIN TURBINE LUBE OIL TEMP CONTROLLER FAILURE: Control (in auto) fails causing high LO temperature. Manual Control will work.		
Time	Position	Applicant's Actions or Behavior
	CUE	After operable channel has been selected & RPV level stabilized AND when directed by Chief Examiner, insert Event 4 - Main Turbine Lube Oil high temperature.
	BOP	Reports High Temperature Turbine Generator Lube Oil Alarm (Window 5018, 3-A) (Alarm @ 125 F) Determines Turbine LO Temperature Controller is not functioning in automatic. Take actions in Annunciator Response Procedure for Window 5018, 3-A When directed, takes manual control and adjusts cooling water flow to lube oil coolers. Restores temperature to normal band. (Normal is 110 - 120 F) BOP/RO may check main turbine bearing temperatures (computer points).
	SRO	Directs BOP to investigate cause of high temperature alarm. Directs local area operator to investigate. Directs BOP to take manual control and restore temperature to normal band. Directs RO to carry out actions in Annunciator Response Procedure 5018, 3-A. Contacts Maintenance to prepare work order to troubleshoot.
	RO	Monitor plant parameters as directed by SRO. BOP/RO may check main turbine bearing temperatures (computer points).
	CUE	After temperature has stabilized AND when directed by Chief Examiner, insert Event 5 - Inoperable Div 2 SX Pump.

Event No.: _5_ (SRO-TS & C) Inoperable Div 2 Shutdown Service Water (SX) Pump. Engineering Reports that bearing oil samples indicate the upper pump bearing has failed.

Time	Position	Applicant's Actions or Behavior
	CUE	After temperature has stabilized AND when directed by Chief Examiner, insert Event 5 - Inoperable Div 2 Shutdown Service Water (SX) Pump. Engineering Reports that bearing oil samples indicate the upper pump bearing has failed.
	SRO	**Note to Examiner** - Recall that Div 1 DG is inoperable. Declares Div 2 SX pump inoperable. Enter TS 3.7.1 Div 2 SX Subsystem. • Note 1 in TS 3.7.1 - Enter applicable Conditions & Required Actions for LCO 3.8.1, "AC Sources - Operating," for Diesel Generators made inoperable by SX. TS 3.7.1.B.1 - Div 2 SX inoperable. 72 hours to restore to operable. Declare Div 2 DG inoperable. SRO may put Div 2 DG in "Maintenance" mode to prevent auto startup. Enter TS 3.8.1, AC Sources - Operating TS 3.8.1.B.1 - with 1 DG inoperable, perform SR 3.8.1.1 for offsite circuits w/in 1 hour and once every 8 hours. TS 3.8.1.B.2 - with 1 DG inoperable, declare required features, supported by the inoperable DG, inoperable when the redundant required features are inoperable. 4 hours from discovery. TS 3.8.1.E - with 2 DGs inoperable, restore 1 DG to operable w/in 2 hrs. TS 3.8.1.F - If unable to complete actions, be in Mode 3 in 12 hours AND Mode 4 in 36 hours.
	BOP/RO	Monitor plant parameters as directed by SRO.
	CUE	After SRO has declared Div 2 SX pump & Div 2 DG inoperable and entered the appropriate TS, AND when directed by Chief Examiner, insert Event 6, Condenser Emergency Overflow Valve Fails Open.

Event No.: _6_ (RO-C) Condenser Emergency Overflow Valve (1CD020) Fails Open. RO can take manual control of controller and close valve.		
Time	Position	Applicant's Actions or Behavior
	CUE	After SRO has declared Div 2 SX pump & Div 2 DG inoperable and entered the appropriate TS, AND when directed by Chief Examiner, insert Event 6, Condenser Emergency Overflow Valve Fails Open.
	BOP	Reports the Condenser Emergency Overflow Valve Not Fully Closed Alarm (Window 5014, 4-B). Reviews Annunciator Response Procedure 5014, 4-B. Monitors and reports Condensate & Feedwater system parameters.
	RO	Reports Condenser Emergency Overflow Valve controller failure. When directed, to take manual control of Condenser Emergency Overflow Valve controller and restore hotwell level (36" - 40") per CPS No. 3104.01, CONDENSATE/CONDENSATE BOOSTER.
	SRO	Directs RO/BOP to review and carry out actions in Annunciator Response Procedure 5014, 4-B. Directs RO to control hotwell level as necessary per CPS No. 3104.01. Directs RO to take manual control of Condenser Emergency Overflow Valve controller and restore hotwell level.
	CUE	After controller is in manual & hotwell level has been restored to normal AND when directed by Chief examiner, insert Event 7 - Loss of one Service Air Compressor & Small Instrument Air leak. **DO NOT LET SA/IA HEADER PRESSURE DROP BELOW 70 PSIG.**

Event No.: _7_ (BOP-C) Loss of "B" service air (SA) compressor. SMALL IA Leak After Standby Compressor Started.		
Time	Position	Applicant's Actions or Behavior
	CUE	After controller is in manual & hotwell level has been restored to normal AND when directed by Chief examiner, insert Event 7 - Loss of "B" Service Air Compressor & Small Instrument Air leak. **DO NOT LET SA/IA HEADER PRESSURE DROP BELOW 70 PSIG.**
	BOP	Report the Auto Trip Pump/Motor (due to "B" SA compressor trip) Alarm Window 5041-1A Report the low SA Header Pressure (RadWaste Bldg, Control Bldg, Aux/Fuel Bldg, Turbine Bldg) Alarm Windows (5041, 5-B to 5-E) Report for low IA Header Pressure (RadWaste Bldg & Control Bldg) Alarm Windows (5041, 4-B to 4-C) **Note to Examiner** - The SA pressure indicated in MCR is sensed near compressor discharge and not on the ring headers. When Directed, start Standby SA Compressor. (BOP may use CPS 3214.01, Plant Air (SA &IA) to start Compressor.) Monitor SA header pressures. After compressor startup, report IA header pressure stable or slowly decreasing. BOP may report high amps on running compressors.
	SRO	Direct BOP to start standby SA compressor and monitor SA &IA header pressures. If IA header pressure lowers to 60 psig & can not be restored, Mode Switch to Shutdown. (Step 3, CPS 4004.01, Instrument Air Losses.) Direct BOP to review & carry our actions in CPS 4004.01, Instrument Air Losses. Directs BOP to review & carry out actions in Annunciator Response Procedures (ARP) 5041, 4-B & 4-C and 5041, 5-B to 5-E. Direct RO to monitor SDV rod block OR control rods begin to drift. If RO identifies these indications, Mode Switch to Shutdown. Step 3, CPS 4004.01 Direct RO to review & carry out actions in ARP for Scram Pilot Valve Air Header Pressure Low Alarm Window 5004, 3-L Direct Maintenance to initiate work order and troubleshoot/repair. Direct local area operators to check SA/IA headers for leaks.
	RO	Monitor SDV rod block OR control rods begin to drift. Monitor other plant parameters as directed by SRO. Report Scram Pilot Valve Air Header Pressure Low Alarm Window 5004, 3-L
	CUE	After 3 minute delay from compressor trip, Local Area operator reports to SRO that there is a small non-isolable IA header leak.

Event No.: _7_ (CONTINUED) Loss of "B" service air (SA) compressor. SMALL IA Leak After Standby Compressor Started.

Time	Position	Applicant's Actions or Behavior
	CUE	**DO NOT LET SA/IA HEADER PRESSURE DROP BELOW 70 PSIG.**
	SRO	**Note to Examiner** - SRO may determine that plant conditions are unstable and scram the Rx. **Note to Examiner** - All SA ring headers & IA ring header in RadWaste & Control Bldg will auto isolate @ 70 psig in header. This should not cause a scram. SRO may direct controlled plant shut down per CPS 3006.01, Unit Shutdown. Notify Chemistry of power change > 15% & Load Dispatch of unit going offline.
	RO	Continue to monitor for abnormal equipment operation due to loss of IA/SA. Reduce reactor power by adjusting recirc flow via FCV operation.
	BOP	Continue to monitor for abnormal equipment operation due to loss of IA/SA.
	CUE	After standby compressor has been started and SRO has made a decision on plant shutdown AND when directed by Chief Examiner, insert Event 8, 1A Inboard MSIV drifting off open seat (due to IA leak). **DO NOT LET SA/IA HEADER PRESSURE DROP BELOW 70 PSIG.**

Event No.: _8_ (C) 1A Inboard MSIV drifting off open seat (due to IA leak).		
Time	Position	Applicant's Actions or Behavior
	CUE	After standby compressor has been started and SRO has made a decision on plant shutdown AND when directed by Chief Examiner, insert Event 8, 1A Inboard MSIV drifting off open seat (due to IA leak). **DO NOT LET SA/IA HEADER PRESSURE DROP BELOW 70 PSIG.**
	BOP	Report 1A Inboard MSIV not full open/closed. Reports DIVISION 1 OR 4 MAIN STEAM ISOLATION VALVE CLOSURE TRIP (Window 5004, 3-C). (Only action is to follow scram procedure, if applicable.) Verify other MSIVs full open. Verify other equipment effected by SA/IA is operating normally. When directed, place control switch for 1A Inboard MSIV to OFF (per step 4.2, CPS 4004.01, Instrument Air Losses)
	SRO	Direct BOP to review and carry out actions in CPS 4004.01, Instrument Air Losses, step 4.2 (IF MSIVs close due to loss of IA, THEN place control switch in OFF). Direct RO/BOP to verify other equipment effected by SA/IA is operating normally. (i.e. control rods, scram valves, ADS, Offgas Vent discharge valve, etc..) **Note to Examiner** - SRO may determine that plant conditions are unstable and scram the Rx.
	RO	Monitor plant parameters as directed by the SRO.
	CUE	After control switch for 1A Inboard MSIV is OFF AND when directed by Chief examiner, insert Event 9, rod drift (due to IA leak); Event 10, ATWS hydraulic lock; and Event 11, SLC not inject. **DO NOT LET SA/IA HEADER PRESSURE DROP BELOW 70 PSIG.** **Note to Examiner** - The purpose of Event 9 (rod drift) is to force the SRO into manually initiating a Rx scram. The SRO will probably have scrammed when the MSIV drifted shut.

Events 9, 10, & 11 Event 9, rod drift (due to IA leak); Event 10, ATWS hydraulic lock; Event 11, SLC not inject.

Time	Position	Applicant's Actions or Behavior
	CUE	After control switch for 1A Inboard MSIV is OFF AND when directed by Chief examiner, insert Event 9, rod drift (due to IA leak); Event 10, ATWS hydraulic lock; and Event 11, SLC not inject. **DO NOT LET SA/IA HEADER PRESSURE DROP BELOW 70 PSIG.**
	RO	Report rod drift alarm. (Rod Drift Annunciator Window 5006, 4-G). Per ARP 5004, 4-G: Press ROD DRIFT button on the OCM to display rod drift information on full core display map. When directed, place the Mode Switch in Shutdown per Step 3, 4004.01, Instrument Air Losses.
	SRO	Refer to CPS 4007.02, Inadvertent Rod Movement. Refer to CPS 4004.01, Instrument Air Losses. Direct RO to scram the Rx (Mode Switch to Shutdown) due to rod drift w/ IA Leak. (Step 3, 4004.01, Instrument Air Losses.)
	RO	When directed, places Mode Switch in Shutdown. Reports rods did not insert & Shutdown Criteria not met. **Note to Examiner** - Shutdown Criteria is: All rods are in to at least 02; OR no more than one rod out past 02, with all other rods in at 00; OR a qualified Rx Eng has determined the Rx will remain shutdown under all conditions without boron. When directed, Insert Manual scram (it won't work). When directed, Initiate ARI (it won't work).
	SRO	Enter EOP-1 (RPV Control) & transition to EOP-1A (ATWS RV Control) Direct BOP to inhibit ADS. Direct RO to insert manual scram & ARI. Obtain RPV & Containment parameters from RO/BOP. RPV Pressure control w/ BPVs & auto SRVs.
	BOP	When directed, inhibit ADS.

Events: 10 & 11 (Continued) Event 10, ATWS hydraulic lock; and Event 11, SLC not inject.

Time	Position	Applicant's Actions or Behavior
	SRO	Direct BOP to initiate SLC per CPS 4411.10, SLC Operations. (It will not work.) Direct BOP to initiate alternate boron injection per CPS 4411.10, step 2.2 (RCIC). Direct maintenance personnel to begin trouble shooting SLC. Direct RO to insert rods, per CPS 4411.08, ALTERNATE CONTROL ROD INSERTION. **Note to Examiner** - In order to manually insert rods, the Rod Pattern Controller must be bypassed (step 2.5, CPS 4411.08). In the scenario, when the SRO directs maintenance to complete this action, it will take ~ 5 min. to bypass. Maintenance will call back that the rod pattern controller has been bypassed.
	RO	When directed, manually insert rods IAW CPS 4411.08.
	BOP	When directed, initiate SLC. Report SLC pumps running, continuity lights ON, no injection (SLC discharge pressure much > RCS, power not decreasing, and tank level not decreasing). When directed, initiate alternate boron injection per CPS 4411.10, step 2.2 (RCIC).
	SRO	Depending on Rx power & level, the SRO will direct Terminating and Preventing Injection using one of two different criteria: If ≤ 5% OR ≤ 60", Terminate & Prevent injection of HPCS, LPCS, & LPCI. Maintain level band A [-162" (TAF) to Level 8 (52")] If > 5% AND > 60", lower level to reduce sub-cooling. Terminate & Prevent injection using Insert F1. (Cond/Feed, HPCS, RCIC (if not operating), LPCS, LPCI, etc..) Let level drop to -60." [RR pumps shift to slow speed @ level 3 (8.9") & stop @ level 2 (-45.5")] Maintain level band B [-162" to -60"]
	RO/ BOP	Terminate & Prevent Injection as directed by SRO. Maintain RPV level as directed by SRO.

Events: 10 & 11 (Continued) Event 10, ATWS hydraulic lock; and Event 11, SLC not inject.		
Time	Position	Applicant's Actions or Behavior
	CUE	In order to manually insert rods, the Rod Pattern Controller must be bypassed (step 2.5, CPS 4411.08). In the scenario, when the SRO directs maintenance to complete this action, it will take ~ 5 min. to bypass. Maintenance will call back that the rod pattern controller has been bypassed.
	SRO	When maintenance reports that the Rod Pattern Controller has been bypassed, direct RO to manually insert rods per CPS 4411.08.
	RO	When directed, manually insert rods, per CPS 4411.08, ALTERNATE CONTROL ROD INSERTION. Continues to drive rods. Reports when all rods are inserted.
	CUE	End Scenario - Rods are being inserted, RPV level and pressure are under control, AND when directed by Chief examiner.

Extra Comment Page (if needed)

Time	Position	Applicant's Actions or Behavior

Facility: CLINTON POWER STATION Scenario No.: 02 Op-Test No.: 2000301

Examiners: _____ Operators: _____

Objectives: Exercise EOP-3, "Emergency Depressurization." Evaluate applicants while: 1) shifting recirc pumps to fast speed, 2) conducting a HPCS surveillance, 3) responding to a HPCS pump breaker failure, 4) responding to a reactor recirc FCV "A" drifting open, 5) responding to a CRDH flow controller failure, 6) ~~responding to LPCS/RHR-A water leg pump leak~~, 7) responding to a "B" CCW pump trip, 8) responding to a FWLCS master level controller failure, 9) responding to an earthquake, 10) responding to a RCIC turvine overspeed trip, and 11) responding to an ADS logic failure.

Initial Conditions: 36% power, NOP, NOT, EOC, Xenon building in from a down power maneuver. The motor driven feed pump is out of service.

Turnover: Unit is at 36% power. Xenon is building in as a result of a recent down power maneuver. You are to begin restoring power to 100%. Shift recirculation pumps to fast speed. After the pump shift and the plant is stabilized, conduct CPS No. 9051.01, HPCS Pump Operability/Water Leg Pump Check Valves Test (tank to tank). Operators are in place, standing by to support the surveillance. Engineering identified a potential problem with HPCS flow data during the last surveillance and wants to re-verify the data. The MDRFP is OOS for motor bearing replacement. New fuel is being loaded into the new fuel storage vault.

Event No.	Malf. No.	Event Type*	Event Description
1		R	Shift recirculation pumps to fast speed
2		N	HPCS Surveillance (tank to tank) CPS 9051.01, Section 8.3
3		C	HPCS Pump breaker failure
4		C	Rx recirculation "A" flow control valve drifts open
5		I	CRDH Flow Controller, C11-R600, fails
~~6~~		~~C~~	~~LPCS/RHR-A water leg pump leak~~
7		C	Trip of "B" CCW pump
8		I	FWLCS master level controller fails to +40"
9		M	Earthquake: - MSIVs shut - Leak in condensate system - Small leak in Rx recirculation system - Leak from drywell into containment
10		C	RCIC overspeed trip after auto start
11		C	ADS logic failure

* (N)ormal, (R)eactivity, (I)nstrument, (C)omponent, (M)ajor

Event No.: 1 (RO - Reactivity Change) Shift Recirculation Pumps to Fast Speed.		
Time	Position	Applicant's Actions or Behavior
	SRO	Conduct crew brief. Up to Step 8.4.3, CPS 3004.01 has been completed. **Note to Examiner** - The detailed Reactivity Management brief was completed prior to the crew taking the shift. Transfer pumps to fast IAW CPS 3302.01, Reactor Recirculation, step 8.1.2. Verify Flow Control Line ≥ 60%. (Step 8.1.2.1, CPS 3302.01) Direct **local** operators to bypass the FW Flow FCV cavitation / RR pump downshift interlock for each pump. Annunciators 5003-4C/4J, RECIRC MG A(B) INTLK BYPASS will be received.(Step 8.1.2.2, CPS 3302.01) Direct RO/BOP to Reset/Verify Reset FCV & pump interlocks. (Step 8.1.2.3, CPS 3302.01) Direct RO to Reset FCV motion control inhibit (step 8.1.2.3.a, CPS 3302.01) Direct FCV to be positioned at minimum position for pump being shifted to fast. Direct the other FCV be adjusted to maintain Rx power constant and Feedwater flow ≥ 3.13 mlbm/hr (~ 29.4 % RTP). (Step 8.1.2.4, CPS 3302.01) Make notifications: RP of potential change in rad levels, Security the perimeter lighting may be effected, plant wide Gaitronics announcement. (Step 8.1.2.7, CPS 3302.01) Direct RO to transfer pumps to fast speed (one at a time). (Step 8.1.2.9, CPS 3302.01)

Event No: 1 (RO-Reactivity Change) Shift Recirculation Pumps to Fast Speed. **(CONTINUED)**		
Time	Position	Applicant's Actions or Behavior
	RO	Verify Flow Control Line ≥ 60% using figure 1, CPS 3302.01. Verify Annunciator 5003-4C/4J, RECIRC MTR A (B) AUTO TRIP OR XFER TO LS window has alarmed when interlock has been bypassed. (Step 8.1.2.2, CPS 3302.01) When directed, reset/Verify Reset FCV & pump interlocks. (Step 8.1.2.3, CPS 3302.01) When directed, reset FCV motion control inhibit (step 8.1.2.3.a, CPS 3302.01) • Zero the A(B) loop SERVO ERROR • Depress the A(B) FCV A/B Motion Inhibit Reset. Verify the lead HPU becomes operational, and FCV motion is no longer inhibited. When directed, position the FCV at minimum for pump being shifted to fast. (step 8.1.2.4, CPS 3302.01) When directed, adjusted the other FCV to maintain Rx power constant and Feedwater flow ≥ 3.13 mlbm/hr (~ 29.4 % RTP). (step 8.1.2.4, CPS 3302.01) (**NOTE to Examiner** - This step is also applicable after the pump shift to fast speed.) When directed, shift pumps to fast speed (one at a time). (step 8.1.2.9, CPS 3302.01) • Transfer the RR pump to fast speed by closing Recirc Pump A(B) Drive Motor Bkr 5A(5B), and observe that the LFMG A(B) Gen Bkr 2A(2B) opens prior to the 5A(5B) breaker closing. • Verify that the LFMG A(B) Mtr Bkr 1A(1B) opens.
	BOP	Monitor plant parameters as directed by SRO. When directed, adjusted the other FCV to maintain Rx power constant and Feedwater flow ≥ 3.13 mlbm/hr (~ 29.4 % RTP). When directed, monitor pump seal key parameters.

Event No: 1 (RO-Reactivity Change) Shift Recirculation Pumps to Fast Speed. **(CONTINUED)**		
Time	Position	Applicant's Actions or Behavior
	SRO	After pumps shifted to fast, direct STA to remove the substitute value from and restore points B33NA003 and/or 004, RR Pump A (B) Motor Power for the RR pump transfer to fast speed. (step 8.1.2.14, CPS 3302.01) Direct increase in power w/ FCV to between 35 & 39% to clear the cavitation interlocks. Direct **local** operators to return the FW Flow FCV cavitation / RR pump downshift interlock for each pump to normal. Verify Annunciator 5003-4C/4J, RECIRC MTR A (B) AUTO TRIP OR XFER TO LS window has cleared when interlock has been returned to normal. (Step 8.1.2.15, CPS 3302.01) Direct RO/BOP to verify cavitation interlocks are cleared.
	RO	When directed, increase in power w/ FCV to between 35 & 39% to clear the cavitation interlocks. Verify Annunciator 5003-4C/4J, RECIRC MTR A (B) AUTO TRIP OR XFER TO LS window has cleared when interlock has been returned to normal. (Step 8.1.2.15, CPS 3302.01) When directed, verify cavitation interlocks are cleared.
	BOP	Monitor plant parameters as directed by SRO.
	CUE	When (1) both pumps have been shifted to FAST, (2) the cavitation interlocks are cleared, (3) the plant is stable, AND (4) with the Chief Examiner's concurrence, begin Event 2 (HPCS Surveillance).

Event No.: 2 - (Normal Evolution) HPCS Surveillance (Tank to Tank)		
Time	Position	Applicant's Actions or Behavior
	SRO	When plant stable, conduct HPCS Pump Operability / Water Leg Pump Check Valves Test (RCIC Tank to RCIC Tank) per CPS 9051.01, step 8.3. Steps 8.3.1 to 8.3.7.2 were completed and signed off on the previous shift. Operators are standing by to support the surveillance. Direct BOP to start HPCS pump and continue the test per CPS 9051.01. **Note to Examiner** - Steps 8.3.11.1 to 8.3.14.6 are local field data gathering actions. The simulator operator will time compress. After field data has been collected, direct BOP to verify valve stem disk attachment per steps 8.3.15.1 & 8.3.15.2 AND then stop the HPCS pump per step 8.3.15.16.
	BOP	Start HPCS pump and continue test per and verify the HPCS minimum flow valve to Suppression Pool, 1E22-FO12, opens. (Step 8.3.8, CPS 9051.01) Simultaneously, slowly throttle open both1E22-F010 and 1E22-F011, HPCS First and Second Test Vlv To Storage Tank, and increase flow to approximately 5050 gpm (Step 8.3.9) Verify minimum flow valve (FO-12) closes. (Step 8.3.10.1) **Note to Examiner** - Steps 8.3.11.1 to 8.3.14.6 are local field data gathering actions. The simulator operator will time compress. Verify valve disk attachment to stem and the anti-rotation device is intact (8.3.15.1 & 8.3.15.2) • Reduce running flow from 5050 gpm to 4800 gpm by positioning 1E22-F010. Increase running flow to 5050 gpm by repositioning 1E22-F010. • Reduce running flow from 5050 gpm to 4800 gpm by positioning 1E22-F011. Increase running flow to 5050 gpm by repositioning 1E22-F011. Simultaneously close 1E22-F010 and 1E22-F011 in a slow controlled manner until the HPCS Pump Min Flow To Suppr Pool Valve 1E22-F012 opens, then fully close 1E22-F010 and 1E22-F011. (Step 8.3.15.3) Stop the HPCS pump (Step 8.3.16) Verify the minimum flow valve closes (Step 8.3.17)
	RO	Monitor plant parameters as directed by SRO.
	CUE	When HPCS pump is secured, EVENT 3 (HPCS pump breaker failure) will actuate.

Event No.: 3 (SRO-TS) HPCS Pump Breaker Failure (smoke from cubicle) when pump is secured. **Note to Examiner** - This is NOT a BOP/RO component failure.		
Time	Position	Applicant's Actions or Behavior
	CUES	• When HPCS pump is secured, EVENT 3 (HPCS pump breaker failure) will actuate. • 1 to 2 minutes after pump is secured, a local area operator will contact control room to report a smell of burnt insulation in the area of the HPCS pump breaker cubicle. • ~ 5 min after maintenance is contacted to investigate, report back that visual inspection indicated the trip relay appeared burnt.
	BOP	Report that control power lights for HPCS pump switch has gone out. Report Alarm Windows • 5062, 7A, DIV 3TRIPPING CONTROL POWER FAILURE . • 5062, 7B, HPCS not ready for auto start/bkr in lower position. ARP 5062, 7A • Check 125V DC MCC 1C voltage on DC MCC 1C VOLTAGE on 1H13-P601. • Dispatch an operator to the control power fuses to determine and replace any blown fuses.
	SRO	Direct BOP to carry out actions in ARP 5062, 7A & 7B. Direct local area operators to report any unusual indications related to HPCS pump or circuit breaker. Refer to TS LCOs: 3.5.1.B.1 - Verify RCIC operable (administratively) w/in 1 hour. 3.5.1.B.2 - Restore HPCS to operable w/in 14 days. 3.8.4 B.1 - Verify Div 3 or 4 DC electrical power subsystem operable. If inoperable, Immediately declare HPCS inoperable. 3.8.9 E.1 - If one or more Div 3 or 4 DC uninterruptible AC bus electrical power distribution subsystems inoperable, Immediately declare HPCS inoperable. Declare HPCS inoperable.
	RO	Monitor plant parameters as directed by SRO.
	CUE	After SRO has declared HPCS inoperable AND when directed by the Chief examiner, enter Event 4 (recirculation FCV "A" drifts open).

Event No. 4 - (RO - C) Rx recirculation "A" flow control valve (FCV) drift open.		
Time	Position	Applicant's Actions or Behavior
	CUE	After SRO has declared HPCS inoperable AND when directed by the Chief examiner, enter Event 4 (recirculation FCV "A" drifts open).
	RO	Report Rx power increasing and generator load increasing w/out operator action. Report recirc flow mismatch. Report "A" FCV motion. When directed, lock up the A-FCV. Rotate collar on HPU-A shutdown Pushbutton and Arm and Depress the pushbutton. Report the value of the recirc loop mismatch. Verify the plant is operating w/in the Stability Control & Power/Flow Map limits.
	SRO	Refer to CPS 4008.01, Abnormal Coolant Flow. Direct RO to lock up the A-FCV to stop FCV motion. Verify the plant is operating w/in the Stability Control & Power/Flow Map limits. Refer to TS 3.4.1 for recirculation loop flow mismatch ($\leq$ 10% mismatch w/ power < 70% thermal).
	BOP	Monitor plant parameters as directed by SRO.
	CUE	After "A" FCV has been locked up and SRO has reviewed TS AND when directed by the Chief examiner, enter Event 5 (CRD Hydraulic Flow Controller Fails in Auto (CRD FCV goes shut).

Event Nos.: 5 (BOP-C) CRD Hydraulic Flow Controller Fails in Auto (CRD FCV goes shut)		
Time	Position	Applicant's Actions or Behavior
	CUES	After "A" Recirc FCV has been locked up and SRO has reviewed TS AND when directed by the Chief examiner, enter Event 5 (CRD Hydraulic Flow Controller Fails in Auto (CRD FCV goes shut). **Note to Examiner** - Initially no alarms. High CRD temps is first alarm. When asked, the simulator operator will report that one rod in alarming due to high temperature and the others are increasing.
	BOP	Report abnormal CRD hydraulic parameters: • low CRD Cooling water flow indication (C11-R605). • Cooling water d/p near zero (C11-R603). • CRD flow control valve A&B indicating lights indicate valves are shut. • Report that the CRD hydraulic controller for the FCVs appears to have failed. When directed, place the CRD hydraulic FCV in manual and restore cooling flow to ~ 40 gpm.
	SRO	Direct RO to carry out the actions in ARP 5006, 1G. Direct BOP to investigate abnormal CRD hydraulic indications. Refer to CPS 3304.01, Control Rod Hydraulic & Control, Section 8.3.1, CRD High Operating Temperature. Direct the BOP to place the CRD hydraulic FCV in manual and restore cooling flow to ~ 40 gpm.
	RO	Report Alarm Window, 5006 - 1G, CRD Hydraulic Temperature High. • RO to call for **local** recorder to determine which CRD is alarming. (SEE CUE)
	CUE	After the CRD Hydraulic Flow Controller has been placed in manual and CRD parameters are stable AND when directed by the Chief Examiner, enter ~~Event 6 (LPCS/RHR-A Water Leg Pump Leak.)~~

Event 6.: (SRO-TS) LPCS/RHR-A Water Leg Pump Leak.
Note to Examiner - This is NOT a BOP/RO component failure. **NOT USED**

Time	Position	Applicant's Actions or Behavior
	CUE	After the CRD Hydraulic Flow Controller has been placed in manual and CRD parameters are stable AND when directed by the Chief Examiner, enter ~~Event 6 (LPCS/RHR-A Water Leg Pump Leak.)~~
	BOP	~~Report Alarms:~~ ~~• 5063-3G, LPCS PUMP DISCHARGE PRESS ABNORMAL. (Low pressure alarm @ ~ 35 psig.)~~ ~~• 5064-5F, RHR PUMP A DISCHARGE PRESSURE ABNORMAL. (Low pressure alarm @ ~ 58 psig.)~~ ~~Report LPCS/RHR-A water leg pump indicates running.~~ ~~Report A-RHR HX pressure is ~ 15 psig. (Normally is 40 - 45 psig.)~~ ~~When directed, secure LPCS/RHR-A water leg pump.~~
	SRO CUE	~~Direct BOP to carry out the actions in ARP 5063-3G & 5064-5F.~~ ~~Dispatch local area operator to investigate.~~ ~~**LOCAL OPERATOR WILL REPORT PUMP FLOW NOISE FROM PUMP**~~ ~~Direct BOP to secure LPCS/RHR-A water leg pump.~~ ~~Refer to TS 3.5.1.H (HPCS & LPCS inoperable which is TS 3.0.3)~~ ~~Make preparations for plant shutdown IAW CPS 3006.01, Unit Shutdown.~~
	RO	~~Monitor plant parameters as directed by SRO.~~
	CUE	~~After SRO reports that plant is in TS 3.0.3 and has made decision to conduct a controlled shutdown~~ AND when directed by the Chief Examiner, enter Event 7 (Trip of "B" CCW pump).

Event No.: 7 (BOP-C) Trip of the "B: CCW Pump.		
Time	Position	Applicant's Actions or Behavior
	CUE	After SRO reports that plant is in TS 3.0.3 and has made decision to conduct a controlled shutdown AND when directed by the Chief examiner, enter Event 7 (Trip of "B" CCW pump).
	BOP	Report Alarm 5040 -1B: AUTO TRIP COMPONENT COOLING WATER PUMP. • With no CCW pumps running, scram the Rx and w/in 1 minute, emergency recirc loop shutdown per CPS 3302.01. • With only 1 CCW pump running, start a standby pump per CPS 3203.01, Component Cooling Water System. When directed, start the standby CCW pump.
	RO	Report Alarms 5003 -3D & -3K: RECIRCULATION MOTOR "A" & "B" WINDING COOLING WATER FLOW LOW • If full CCW flow lost to one pump, w/in 1 minute, perform emergency recirc loop shutdown per CPS 3302.01. • If full CCW flow lost to both pumps, scram the Rx and w/in 1 minute, emergency recirc loop shutdown per CPS 3302.01. • Check component cooling water system for normal operation. • Monitor recirc pump/motor temperatures.
	SRO	Direct BOP to start a standby CCW pump. Direct RO/BOP to carry out actions in ARPs 5003-3D & -3K and 5040-1B. Direct RO/BOP to monitor plant parameters.
	CUE	When the standby CCW pump has been started and the plant is stable AND when directed by the Chief Examiner, enter Event 8 (FWLCS Master Level Controller Failure to + 40").

Event No. 8 (RO-I) FWLCS Master Level Controller Failure to + 40."		
Time	Position	Applicant's Actions or Behavior
	CUE	When the standby CCW pump has been started and the plant is stable AND when directed by the Chief Examiner, enter Event 8 (FWLCS Master Level Controller Failure to + 40").
	RO	Report RPV water level increasing. Report Alarm 5002-2Q, Rx Water Level Hi-Lo (High setpoint is 38.8") When directed, take manual control of the "A" RFP and stabilize RPV level. • Depress MANUAL on the RFP Flow M/A Stations and stabilize RPV level. CPS 3103.01, Feedwater System, Step 8.3.13 When directed, place the Startup Level Controller in service per Step 8.1.5, CPS 3103.01. * Verify/Place the S/U Level Controller in manual. * Verify RFP Start Mode Actuator Selector Switch is selected to a non-operating RFP. * Place/Verify the RFP Flow Controllers, **NOT** selected in previous step in manual. * Adjust the S/U Level Controller % output to match the RFP Flow Controller % output. * Using the RFP Start Mode Actuator Selector Switch, select the desired TURB or VALVE pushbutton. * Null and place the S/U Level Controller in automatic by adjusting the thumb-wheel until the Input pointer is at the setpoint, then press AUTO pushbutton.
	SRO	Direct RO to take manual control of "A" RFP and restore RPV level to ~ 36" Direct RO to carry out actions in ARP 5002-2Q. Refer to CPS 3103.01, Feedwater System, Step 8.3.13, High/Low RPV Level. Direct the RO to place the Startup Level Controller in service per CPS 3103.01, Step 8.1.5, Placing the Startup Level Controller in service OR Step 8.1.9, Transferring Control from the Master Level Controller.
	BOP	Monitor plant parameters as directed by SRO.
	CUE	When the S/U Level Controller is in Auto and RPV level is stable AND when directed by the Chief Examiner, enter Event 9 (Earthquake).

Event Nos. 9, Earthquake with a) MSIVs shutting, b) Condensate System Leak, c) Rx Recirculation system leak, and d) leak from Drywell into Containment.		
Time	Position	Applicant's Actions or Behavior
	CUE	When the S/U Level Controller is in Auto and RPV level is stable AND when directed by the Chief Examiner, enter Event 9 - Earthquake a) MSIVs shutting [30 sec delay], b) Condensate System Leak [30 sec delay], c) Rx Recirculation system leak [5 min delay], d) leak from Drywell into Containment [5 min delay]. **Note to Examiners** - When the earthquake annunciators alarm, the Examiner will verbally cue the Applicant that there is ground motion.
	RO/ BOP	Report alarms: 5009 - 2A: ACCELERATION EXCEEDED AT SEISMIC SWITCH OPERATING BASIS EARTHQUAKE 5009 - 2B: ACCELERATION EXCEEDED OPERATING BASIS EARTHQUAKE 5009-3A: ACTIVATED SEISMIC RECORDER
	SRO	Refer to CPS No. 4301.01, EARTHQUAKE. • Check for any unexpected changes in plant parameters.
	RO	Report MSIVs closed **(This occurs ~ 30 sec after seismic event.)** CPS 4100.01 Rx Scram: Take Mode switch to Shutdown and verify shutdown criteria: • All rods are in to at least 02; OR no more than one rod out past 02, with all other rods in at 00; OR a qualified Rx Eng has determined the Rx will remain shutdown under all conditions without boron. Perform actions in CPS 4100.01, Rx Scram.
	BOP	Repot MSIVs closed. **(This occurs ~ 30 sec after seismic event.)** Sound Containment Evacuation Alarm and make announcement.
	SRO	Direct RO to take Mode switch to Shutdown and verify shutdown criteria. Direct RO/BOP to take immediate actions in CPS 4100.01, Rx Scram. Enter EOP 1, RPV Control.

Event Nos. 9, Earthquake with a) MSIVs shutting, b) Condensate System Leak, c) Rx Recirculation system leak, and d) leak from Drywell into Containment. **(CONTINUED)**
Event 10 - RCIC Trips on Overspeed during Auto (or Manual) S/U. (It will not reset.)

Time	Position	Applicant's Actions or Behavior
	CUE	~ 30 sec after seismic event, the leak in the condensate system will begin. The MCR will receive a telephone report from an area operator that there is a leak in the cond system somewhere between the cond pumps and cond booster pumps.
	BOP	Report alarm 5013-4D, HIGH-HIGH LEVEL FLOOR/EQUIPMENT DRAIN SUMP-TURBINE BUILDING. Report that Cond Polisher Inlet Flow Meter reading abnormally high (~750gpm). When directed, stabilize RPV pressure below 1035 psig using SRVs. When directed, start RCIC for level/pressure control. Report that RCIC trips on overspeed and will not reset from control room.
	RO	When directed, maintain RPV level between Level 3 (8.9") & Level 8 (52"). **Note to Examiner** - No high pressure injection source available. When directed, maximize CRD injection to restore/maintain RPV level.
	SRO	Direct BOP to stabilize RPV pressure below 1035 psig using SRVs. Direct BOP to start RCIC for level/pressure control. Direct local operator to reset RCIC overspeed trip. Direct RO to maintain RPV level between Level 3 & Level 8. Direct RO to maximize CRD injection to restore/maintain RPV level.
	CUE	~ 5 min after seismic event: Rx Recirculation system leak AND leak from Drywell into Containment.

Event Nos. 9 &10 **(CONTINUED)**
Event 11 - ADS Logic Failure (individual valves will open manually)

Time	Position	Applicant's Actions or Behavior
	CUE	~ 5 min after seismic event: Rx Recirculation system leak AND leak from Drywell into Containment.
	RO/ BOP	Report Drywell / Containment Parameters increasing (temperature and pressure) and Suppression Pool Level increase. When directed, start Mixing Compressor to reduce Drywell pressure. When directed, inhibit ADS timer. When directed, initiate Containment Spray per CPS 3312.01, RHR System. When Drywell pressure exceeds 1.68 psig, verify DG & ECCS auto starts and verify Auto isolations. When directed, initiate SLC to maintain level above TAF.
		Enter EOP - 6, Primary Containment Control when parameters exceed entry conditions. • DW/Containment Pressure > 1.68 psig • DW Temperature > 150 deg. F • Containment Temperature > 122 deg. F • Suppression Pool Level > 19 ft., 5 in. Direct RO/BOP to initiate/maximize containment/drywell cooling SRO **MAY** direct BOP to start Mixing Compressor prior to Drywell pressure exceeding 1.68 psig. If unable to maintain level above Level 3, then maintain level above TAF (-162"). Inhibit ADS timer. Use alternate injection sources (Detail E) Inject SLC. SRO **MAY** start Containment Spray per CPS 3312.01, RHR System, to control containment pressure. When Drywell pressure exceeds 1.68 psig, Direct RO/BOP to verify DG & ECCS auto starts and verify Auto isolations.

Event Nos. 9 &10 **(CONTINUED)**
Event 11 - ADS Logic Failure (individual valves will open manually)

Time	Position	Applicant's Actions or Behavior
	SRO	Direct Emergency Depressurization (EOP-3) when level drops to TAF (-162") Direct RO/BOP to prevent LPCS & LPCI injection not needed for core cooling. Direct RO/BOP to initiate ADS (it will not initiate). Direct RO/BOP to manually open 7 SRVs to depressurize the RPV. Depressurize until < Shutdown Cooling Interlock pressure (104 psig) OR until RPV level > TAF.
	RO BOP	When directed, prevent LPCS & LPCI injection not needed for core cooling. When directed, initiate ADS (it will not initiate). Report that ADS did not initiate. When directed, manually open 7 SRVs to depressurize the RPV.
	CUE	End Scenario - RPV depressurized and level maintained above TAF, DW/Containment cooling maximized, AND when directed by the Chief Examiner.

Extra Comment Page (if needed)

Time	Position	Applicant's Actions or Behavior

Facility: CLINTON POWER STATION Scenario No.: 02a Op-Test No.: 2000301

Examiners: _____ Operators: _____

Objectives: Exercise EOP-3, "Emergency Depressurization." Evaluate applicants while: 1) shifting recirc pumps to fast speed, 2) conducting a HPCS surveillance, 3) responding to a HPCS pump breaker failure, 4) responding to a reactor recirc FCV "A" drifting open, ~~5) responding to a CRDH flow controller failure, 6) responding to LPCS/RHR-A water leg pump leak, 7) responding to a "B" CCW pump trip, 8) responding to a FWLCS master level controller failure,~~ 9) responding to an earthquake, 10) responding to a RCIC turvine overspeed trip, and 11) responding to an ADS logic failure.

Initial Conditions: 36% power, NOP, NOT, EOC, Xenon building in from a down power maneuver. The motor driven feed pump is out of service.

Turnover: Unit is at 36% power. Xenon is building in as a result of a recent down power maneuver. You are to begin restoring power to 100%. Shift recirculation pumps to fast speed. After the pump shift and the plant is stabilized, conduct CPS No. 9051.01, HPCS Pump Operability/Water Leg Pump Check Valves Test (tank to tank). Operators are in place, standing by to support the surveillance. Engineering identified a potential problem with HPCS flow data during the last surveillance and wants to re-verify the data. The MDRFP is OOS for motor bearing replacement. New fuel is being loaded into the new fuel storage vault.

Event No.	Malf. No.	Event Type*	Event Description
1		R	Shift recirculation pumps to fast speed
2		N	HPCS Surveillance (tank to tank) CPS 9051.01, Section 8.3
3		C	HPCS Pump breaker failure
4		C	Rx recirculation "A" flow control valve drifts open
~~5~~		~~I~~	~~CRDH Flow Controller, C11-R600, fails~~
~~6~~		~~C~~	~~LPCS/RHR-A water leg pump leak~~
~~7~~		~~C~~	~~Trip of "B" CCW pump~~
~~8~~		~~I~~	~~FWLCS master level controller fails to +40"~~
9		M	Earthquake: - MSIVs shut - Leak in condensate system - Small leak in Rx recirculation system - Leak from drywell into containment
10		C	RCIC overspeed trip after auto start
11		C	ADS logic failure

* (N)ormal, (R)eactivity, (I)nstrument, (C)omponent, (M)ajor

Event No.: 1 (RO - Reactivity Change) Shift Recirculation Pumps to Fast Speed.		
Time	Position	Applicant's Actions or Behavior
	SRO	Conduct crew brief. Up to Step 8.4.3, CPS 3004.01 has been completed. **Note to Examiner** - The detailed Reactivity Management brief was completed prior to the crew taking the shift. Transfer pumps to fast IAW CPS 3302.01, Reactor Recirculation, step 8.1.2. Verify Flow Control Line ≥ 60%. (Step 8.1.2.1, CPS 3302.01) Direct **local** operators to bypass the FW Flow FCV cavitation / RR pump downshift interlock for each pump. Annunciators 5003-4C/4J, RECIRC MG A(B) INTLK BYPASS will be received.(Step 8.1.2.2, CPS 3302.01) Direct RO/BOP to Reset/Verify Reset FCV & pump interlocks. (Step 8.1.2.3, CPS 3302.01) Direct RO to Reset FCV motion control inhibit (step 8.1.2.3.a, CPS 3302.01) Direct FCV to be positioned at minimum position for pump being shifted to fast. Direct the other FCV be adjusted to maintain Rx power constant and Feedwater flow ≥ 3.13 mlbm/hr (~ 29.4 % RTP). (Step 8.1.2.4, CPS 3302.01) Make notifications: RP of potential change in rad levels, Security the perimeter lighting may be effected, plant wide Gaitronics announcement. (Step 8.1.2.7, CPS 3302.01) Direct RO to transfer pumps to fast speed (one at a time). (Step 8.1.2.9, CPS 3302.01)

Event No: 1 (RO-Reactivity Change) Shift Recirculation Pumps to Fast Speed. **(CONTINUED)**		
Time	Position	Applicant's Actions or Behavior
	RO	Verify Flow Control Line ≥ 60% using figure 1, CPS 3302.01. Verify Annunciator 5003-4C/4J, RECIRC MTR A (B) AUTO TRIP OR XFER TO LS window has alarmed when interlock has been bypassed. (Step 8.1.2.2, CPS 3302.01) When directed, reset/Verify Reset FCV & pump interlocks. (Step 8.1.2.3, CPS 3302.01) When directed, reset FCV motion control inhibit (step 8.1.2.3.a, CPS 3302.01) • Zero the A(B) loop SERVO ERROR • Depress the A(B) FCV A/B Motion Inhibit Reset. Verify the lead HPU becomes operational, and FCV motion is no longer inhibited. When directed, position the FCV at minimum for pump being shifted to fast. (step 8.1.2.4, CPS 3302.01) When directed, adjusted the other FCV to maintain Rx power constant and Feedwater flow ≥ 3.13 mlbm/hr (~ 29.4 % RTP). (step 8.1.2.4, CPS 3302.01) (**NOTE to Examiner** - This step is also applicable after the pump shift to fast speed.) When directed, shift pumps to fast speed (one at a time). (step 8.1.2.9, CPS 3302.01) • Transfer the RR pump to fast speed by closing Recirc Pump A(B) Drive Motor Bkr 5A(5B), and observe that the LFMG A(B) Gen Bkr 2A(2B) opens prior to the 5A(5B) breaker closing. • Verify that the LFMG A(B) Mtr Bkr 1A(1B) opens.
	BOP	Monitor plant parameters as directed by SRO. When directed, adjusted the other FCV to maintain Rx power constant and Feedwater flow ≥ 3.13 mlbm/hr (~ 29.4 % RTP). When directed, monitor pump seal key parameters.

Event No: 1 (RO-Reactivity Change) Shift Recirculation Pumps to Fast Speed. **(CONTINUED)**		
Time	Position	Applicant's Actions or Behavior
	SRO	After pumps shifted to fast, direct STA to remove the substitute value from and restore points B33NA003 and/or 004, RR Pump A (B) Motor Power for the RR pump transfer to fast speed. (step 8.1.2.14, CPS 3302.01) Direct increase in power w/ FCV to between 35 & 39% to clear the cavitation interlocks. Direct **local** operators to return the FW Flow FCV cavitation / RR pump downshift interlock for each pump to normal. Verify Annunciator 5003-4C/4J, RECIRC MTR A (B) AUTO TRIP OR XFER TO LS window has cleared when interlock has been returned to normal. (Step 8.1.2.15, CPS 3302.01) Direct RO/BOP to verify cavitation interlocks are cleared.
	RO	When directed, increase in power w/ FCV to between 35 & 39% to clear the cavitation interlocks. Verify Annunciator 5003-4C/4J, RECIRC MTR A (B) AUTO TRIP OR XFER TO LS window has cleared when interlock has been returned to normal. (Step 8.1.2.15, CPS 3302.01) When directed, verify cavitation interlocks are cleared.
	BOP	Monitor plant parameters as directed by SRO.
	CUE	When (1) both pumps have been shifted to FAST, (2) the cavitation interlocks are cleared, (3) the plant is stable, AND (4) with the Chief Examiner's concurrence, begin Event 2 (HPCS Surveillance).

Event No.: 2 - (Normal Evolution) HPCS Surveillance (Tank to Tank)		
Time	Position	Applicant's Actions or Behavior
	SRO	When plant stable, conduct HPCS Pump Operability / Water Leg Pump Check Valves Test (RCIC Tank to RCIC Tank) per CPS 9051.01, step 8.3. Steps 8.3.1 to 8.3.7.2 were completed and signed off on the previous shift. Operators are standing by to support the surveillance. Direct BOP to start HPCS pump and continue the test per CPS 9051.01. **Note to Examiner** - Steps 8.3.11.1 to 8.3.14.6 are local field data gathering actions. The simulator operator will time compress. After field data has been collected, direct BOP to verify valve stem disk attachment per steps 8.3.15.1 & 8.3.15.2 AND then stop the HPCS pump per step 8.3.15.16.
	BOP	Start HPCS pump and continue test per and verify the HPCS minimum flow valve to Suppression Pool, 1E22-FO12, opens. (Step 8.3.8, CPS 9051.01) Simultaneously, <u>slowly throttle open</u> both1E22-F010 and 1E22-F011, HPCS First and Second Test Vlv To Storage Tank, and increase flow to approximately 5050 gpm (Step 8.3.9) Verify minimum flow valve (FO-12) closes. (Step 8.3.10.1) **Note to Examiner** - Steps 8.3.11.1 to 8.3.14.6 are local field data gathering actions. The simulator operator will time compress. Verify valve disk attachment to stem and the anti-rotation device is intact (8.3.15.1 & 8.3.15.2) • Reduce running flow from 5050 gpm to 4800 gpm by positioning 1E22-F010. Increase running flow to 5050 gpm by repositioning 1E22-F010. • Reduce running flow from 5050 gpm to 4800 gpm by positioning 1E22-F011. Increase running flow to 5050 gpm by repositioning 1E22-F011. Simultaneously close 1E22-F010 and 1E22-F011 in a <u>slow controlled manner</u> until the HPCS Pump Min Flow To Suppr Pool Valve 1E22-F012 opens, then fully close 1E22-F010 and 1E22-F011. (Step 8.3.15.3) Stop the HPCS pump (Step 8.3.16) Verify the minimum flow valve closes (Step 8.3.17)
	RO	Monitor plant parameters as directed by SRO.
	CUE	When HPCS pump is secured, EVENT 3 (HPCS pump breaker failure) will actuate.

Event No.: 3 (SRO-TS) HPCS Pump Breaker Failure (smoke from cubicle) when pump is secured. **Note to Examiner** - This is NOT a BOP/RO component failure.		
Time	Position	Applicant's Actions or Behavior
	CUES	• When HPCS pump is secured, EVENT 3 (HPCS pump breaker failure) will actuate. • 1 to 2 minutes after pump is secured, a local area operator will contact control room to report a smell of burnt insulation in the area of the HPCS pump breaker cubicle. • ~ 5 min after maintenance is contacted to investigate, report back that visual inspection indicated the trip relay appeared burnt.
	BOP	Report that control power lights for HPCS pump switch has gone out. Report Alarm Windows • 5062, 7A, DIV 3TRIPPING CONTROL POWER FAILURE . • 5062, 7B, HPCS not ready for auto start/bkr in lower position. ARP 5062, 7A • Check 125V DC MCC 1C voltage on DC MCC 1C VOLTAGE on 1H13-P601. • Dispatch an operator to the control power fuses to determine and replace any blown fuses.
	SRO	Direct BOP to carry out actions in ARP 5062, 7A & 7B. Direct local area operators to report any unusual indications related to HPCS pump or circuit breaker. Refer to TS LCOs: 3.5.1.B.1 - Verify RCIC operable (administratively) w/in 1 hour. 3.5.1.B.2 - Restore HPCS to operable w/in 14 days. 3.8.4 B.1 - Verify Div 3 or 4 DC electrical power subsystem operable. If inoperable, Immediately declare HPCS inoperable. 3.8.9 E.1 - If one or more Div 3 or 4 DC uninterruptible AC bus electrical power distribution subsystems inoperable, Immediately declare HPCS inoperable. Declare HPCS inoperable.
	RO	Monitor plant parameters as directed by SRO.
	CUE	After SRO has declared HPCS inoperable AND when directed by the Chief examiner, enter Event 4 (recirculation FCV "A" drifts open).

Event No. 4 - (RO - C) Rx recirculation "A" flow control valve (FCV) drift open.		
Time	Position	Applicant's Actions or Behavior
	CUE	After SRO has declared HPCS inoperable AND when directed by the Chief examiner, enter Event 4 (recirculation FCV "A" drifts open).
	RO	Report Rx power increasing and generator load increasing w/out operator action. Report recirc flow mismatch. Report "A" FCV motion. When directed, lock up the A-FCV. Rotate collar on HPU-A shutdown Pushbutton and Arm and Depress the pushbutton. Report the value of the recirc loop mismatch. Verify the plant is operating w/in the Stability Control & Power/Flow Map limits.
	SRO	Refer to CPS 4008.01, Abnormal Coolant Flow. Direct RO to lock up the A-FCV to stop FCV motion. Verify the plant is operating w/in the Stability Control & Power/Flow Map limits. Refer to TS 3.4.1 for recirculation loop flow mismatch (≤ 10% mismatch w/ power < 70% thermal).
	BOP	Monitor plant parameters as directed by SRO.
	CUE	~~After "A" FCV has been locked up and SRO has reviewed TS AND when directed by the Chief examiner, enter Event 5 (CRD Hydraulic Flow Controller Fails in Auto (CRD FCV goes shut).~~

Event Nos.: 5 (BOP-C) CRD Hydraulic Flow Controller Fails in Auto (CRD FCV goes shut) **NOT USED**		
Time	Position	Applicant's Actions or Behavior
	CUES	~~After "A" Recirc FCV has been locked up and SRO has reviewed TS AND when directed by the Chief examiner, enter Event 5 (CRD Hydraulic Flow Controller Fails in Auto (CRD FCV goes shut).~~ ~~**Note to Examiner** - Initially no alarms. High CRD temps is first alarm.~~ ~~When asked, the simulator operator will report that one rod in alarming due to high temperature and the others are increasing.~~
	BOP	~~Report abnormal CRD hydraulic parameters:~~ ~~• low CRD Cooling water flow indication (C11-R605).~~ ~~• Cooling water d/p near zero (C11-R603).~~ ~~• CRD flow control valve A&B indicating lights indicate valves are shut.~~ ~~• Report that the CRD hydraulic controller for the FCVs appears to have failed.~~ ~~When directed, place the CRD hydraulic FCV in manual and restore cooling flow to ~ 40 gpm.~~
	SRO	~~Direct RO to carry out the actions in ARP 5006, 1G.~~ ~~Direct BOP to investigate abnormal CRD hydraulic indications.~~ ~~Refer to CPS 3304.01, Control Rod Hydraulic & Control, Section 8.3.1, CRD High Operating Temperature.~~ ~~Direct the BOP to place the CRD hydraulic FCV in manual and restore cooling flow to ~ 40 gpm.~~
	RO	~~Report Alarm Window, 5006 - 1G, CRD Hydraulic Temperature High.~~ ~~• RO to call for **local** recorder to determine which CRD is alarming. (SEE CUE)~~
	CUE	~~After the CRD Hydraulic Flow Controller has been placed in manual and CRD parameters are stable AND when directed by the Chief Examiner, enter Event 6 (LPCS/RHR-A Water Leg Pump Leak.)~~

Event 6.: (SRO-TS) LPCS/RHR-A Water Leg Pump Leak. **NOT USED**
Note to Examiner - This is NOT a BOP/RO component failure.

Time	Position	Applicant's Actions or Behavior
	CUE	~~After the CRD Hydraulic Flow Controller has been placed in manual and CRD parameters are stable AND when directed by the Chief Examiner, enter Event 6 (LPCS/RHR-A Water Leg Pump Leak.)~~
	BOP	~~Report Alarms:~~ ~~• 5063-3G, LPCS PUMP DISCHARGE PRESS ABNORMAL. (Low pressure alarm @ ~ 35 psig.)~~ ~~• 5064-5F, RHR PUMP A DISCHARGE PRESSURE ABNORMAL. (Low pressure alarm @ ~ 58 psig.)~~ ~~Report LPCS/RHR-A water leg pump indicates running.~~ ~~Report A-RHR HX pressure is ~ 15 psig. (Normally is 40 - 45 psig.)~~ ~~When directed, secure LPCS/RHR-A water leg pump.~~
	SRO CUE	~~Direct BOP to carry out the actions in ARP 5063-3G & 5064-5F.~~ ~~Dispatch local area operator to investigate.~~ ~~**LOCAL OPERATOR WILL REPORT PUMP FLOW NOISE FROM PUMP**~~ ~~Direct BOP to secure LPCS/RHR-A water leg pump.~~ ~~Refer to TS 3.5.1.H (HPCS & LPCS inoperable which is TS 3.0.3)~~ ~~Make preparations for plant shutdown IAW CPS 3006.01, Unit Shutdown.~~
	RO	~~Monitor plant parameters as directed by SRO.~~
	CUE	~~After SRO reports that plant is in TS 3.0.3 and has made decision to conduct a controlled shutdown AND when directed by the Chief Examiner, enter Event 7 (Trip of "B" CCW pump).~~

Event No.: 7 (BOP-C) Trip of the "B: CCW Pump. **NOT USED**		
Time	Position	Applicant's Actions or Behavior
	CUE	~~After SRO reports that plant is in TS 3.0.3 and has made decision to conduct a controlled shutdown AND when directed by the Chief examiner, enter Event 7 (Trip of "B" CCW pump).~~
	BOP	~~Report Alarm 5040 -1B: AUTO TRIP COMPONENT COOLING WATER PUMP.~~ • ~~With no CCW pumps running, scram the Rx and w/in 1 minute, emergency recirc loop shutdown per CPS 3302.01.~~ • ~~With only 1 CCW pump running, start a standby pump per CPS 3203.01, Component Cooling Water System.~~ ~~When directed, start the standby CCW pump~~.
	RO	~~Report Alarms 5003 -3D & -3K: RECIRCULATION MOTOR "A" & "B" WINDING COOLING WATER FLOW LOW~~ • ~~If full CCW flow lost to one pump, w/in 1 minute, perform emergency recirc loop shutdown per CPS 3302.01.~~ • ~~If full CCW flow lost to both pumps, scram the Rx and w/in 1 minute, emergency recirc loop shutdown per CPS 3302.01.~~ • ~~Check component cooling water system for normal operation.~~ • ~~Monitor recirc pump/motor temperatures.~~
	SRO	~~Direct BOP to start a standby CCW pump.~~ ~~Direct RO/BOP to carry out actions in ARPs 5003-3D & -3K and 5040-1B.~~ ~~Direct RO/BOP to monitor plant parameters~~.
	CUE	~~When the standby CCW pump has been started and the plant is stable AND when directed by the Chief Examiner, enter Event 8 (FWLCS Master Level Controller Failure to + 40").~~

Event No. 8 (RO-I) FWLCS Master Level Controller Failure to + 40." **NOT USED**		
Time	Position	Applicant's Actions or Behavior
	CUE	~~When the standby CCW pump has been started and the plant is stable AND when directed by the Chief Examiner, enter Event 8 (FWLCS Master Level Controller Failure to + 40").~~
	RO	~~Report RPV water level increasing.~~ ~~Report Alarm 5002-2Q, Rx Water Level Hi-Lo (High setpoint is 38.8")~~ ~~When directed, take manual control of the "A" RFP and stabilize RPV level.~~ ~~• Depress MANUAL on the RFP Flow M/A Stations and stabilize RPV level. CPS 3103.01, Feedwater System, Step 8.3.13~~ ~~When directed, place the Startup Level Controller in service per Step 8.1.5, CPS 3103.01.~~ ~~* Verify/Place the S/U Level Controller in manual.~~ ~~* Verify RFP Start Mode Actuator Selector Switch is selected to a non-operating RFP.~~ ~~* Place/Verify the RFP Flow Controllers, **NOT** selected in previous step in manual.~~ ~~* Adjust the S/U Level Controller % output to match the RFP Flow Controller % output.~~ ~~* Using the RFP Start Mode Actuator Selector Switch, select the desired TURB or VALVE pushbutton.~~ ~~* Null and place the S/U Level Controller in automatic by adjusting the thumb-wheel until the Input pointer is at the setpoint, then press AUTO pushbutton.~~
	SRO	~~Direct RO to take manual control of "A" RFP and restore RPV level to ~ 36"~~ ~~Direct RO to carry out actions in ARP 5002-2Q.~~ ~~Refer to CPS 3103.01, Feedwater System, Step 8.3.13, High/Low RPV Level.~~ ~~Direct the RO to place the Startup Level Controller in service per CPS 3103.01, Step 8.1.5, Placing the Startup Level Controller in service OR Step 8.1.9, Transferring Control from the Master Level Controller.~~
	BOP	~~Monitor plant parameters as directed by SRO.~~
	CUE	~~When the S/U Level Controller is in Auto and RPV level is stable AND~~ when directed by the Chief Examiner, enter Event 9 (Earthquake).

Event Nos. 9, Earthquake with a) MSIVs shutting, b) Condensate System Leak, c) Rx Recirculation system leak, and d) leak from Drywell into Containment.		
Time	Position	Applicant's Actions or Behavior
	CUE	When the S/U Level Controller is in Auto and RPV level is stable AND when directed by the Chief Examiner, enter Event 9 - Earthquake a) MSIVs shutting [30 sec delay], b) Condensate System Leak [30 sec delay], c) Rx Recirculation system leak [5 min delay], d) leak from Drywell into Containment [5 min delay]. **Note to Examiners** - When the earthquake annunciators alarm, the Examiner will verbally cue the Applicant that there is ground motion.
	RO/ BOP	Report alarms: 5009 - 2A: ACCELERATION EXCEEDED AT SEISMIC SWITCH OPERATING BASIS EARTHQUAKE 5009 - 2B: ACCELERATION EXCEEDED OPERATING BASIS EARTHQUAKE 5009-3A: ACTIVATED SEISMIC RECORDER
	SRO	Refer to CPS No. 4301.01, EARTHQUAKE. • Check for any unexpected changes in plant parameters.
	RO	Report MSIVs closed **(This occurs ~ 30 sec after seismic event.)** CPS 4100.01 Rx Scram: Take Mode switch to Shutdown and verify shutdown criteria: • All rods are in to at least 02; OR no more than one rod out past 02, with all other rods in at 00; OR a qualified Rx Eng has determined the Rx will remain shutdown under all conditions without boron. Perform actions in CPS 4100.01, Rx Scram.
	BOP	Repot MSIVs closed. **(This occurs ~ 30 sec after seismic event.)** Sound Containment Evacuation Alarm and make announcement.
	SRO	Direct RO to take Mode switch to Shutdown and verify shutdown criteria. Direct RO/BOP to take immediate actions in CPS 4100.01, Rx Scram. Enter EOP 1, RPV Control.

Event Nos. 9, Earthquake with a) MSIVs shutting, b) Condensate System Leak, c) Rx Recirculation system leak, and d) leak from Drywell into Containment. **(CONTINUED)**
Event 10 - RCIC Trips on Overspeed during Auto (or Manual) S/U. (It will not reset.)

Time	Position	Applicant's Actions or Behavior
	CUE	~ 30 sec after seismic event, the leak in the condensate system will begin. The MCR will receive a telephone report from an area operator that there is a leak in the cond system somewhere between the cond pumps and cond booster pumps.
	BOP	Report alarm 5013-4D, HIGH-HIGH LEVEL FLOOR/EQUIPMENT DRAIN SUMP-TURBINE BUILDING. Report that Cond Polisher Inlet Flow Meter reading abnormally high (~750gpm). When directed, stabilize RPV pressure below 1035 psig using SRVs. When directed, start RCIC for level/pressure control. Report that RCIC trips on overspeed and will not reset from control room.
	RO	When directed, maintain RPV level between Level 3 (8.9") & Level 8 (52"). **Note to Examiner** - No high pressure injection source available. When directed, maximize CRD injection to restore/maintain RPV level.
	SRO	Direct BOP to stabilize RPV pressure below 1035 psig using SRVs. Direct BOP to start RCIC for level/pressure control. Direct local operator to reset RCIC overspeed trip. Direct RO to maintain RPV level between Level 3 & Level 8. Direct RO to maximize CRD injection to restore/maintain RPV level.
	CUE	~ 5 min after seismic event: Rx Recirculation system leak AND leak from Drywell into Containment.

Event Nos. 9 &10 **(CONTINUED)** Event 11 - ADS Logic Failure (individual valves will open manually)		
Time	Position	Applicant's Actions or Behavior
	CUE	~ 5 min after seismic event: Rx Recirculation system leak AND leak from Drywell into Containment.
	RO/ BOP	Report Drywell / Containment Parameters increasing (temperature and pressure) and Suppression Pool Level increase. When directed, start Mixing Compressor to reduce Drywell pressure. When directed, inhibit ADS timer. When directed, initiate Containment Spray per CPS 3312.01, RHR System. When Drywell pressure exceeds 1.68 psig, verify DG & ECCS auto starts and verify Auto isolations. When directed, initiate SLC to maintain level above TAF.
		Enter EOP - 6, Primary Containment Control when parameters exceed entry conditions. • DW/Containment Pressure > 1.68 psig • DW Temperature > 150 deg. F • Containment Temperature > 122 deg. F • Suppression Pool Level > 19 ft., 5 in. Direct RO/BOP to initiate/maximize containment/drywell cooling SRO **MAY** direct BOP to start Mixing Compressor prior to Drywell pressure exceeding 1.68 psig. If unable to maintain level above Level 3, then maintain level above TAF (-162"). Inhibit ADS timer. Use alternate injection sources (Detail E) Inject SLC. SRO **MAY** start Containment Spray per CPS 3312.01, RHR System, to control containment pressure. When Drywell pressure exceeds 1.68 psig, Direct RO/BOP to verify DG & ECCS auto starts and verify Auto isolations.

Event Nos. 9 &10 **(CONTINUED)**
Event 11 - ADS Logic Failure (individual valves will open manually)

Time	Position	Applicant's Actions or Behavior
	SRO	Direct Emergency Depressurization (EOP-3) when level drops to TAF (-162") Direct RO/BOP to prevent LPCS & LPCI injection not needed for core cooling. Direct RO/BOP to initiate ADS (it will not initiate). Direct RO/BOP to manually open 7 SRVs to depressurize the RPV. Depressurize until < Shutdown Cooling Interlock pressure (104 psig) OR until RPV level > TAF.
	RO BOP	When directed, prevent LPCS & LPCI injection not needed for core cooling. When directed, initiate ADS (it will not initiate). Report that ADS did not initiate. When directed, manually open 7 SRVs to depressurize the RPV.
	CUE	End Scenario - RPV depressurized and level maintained above TAF, DW/Containment cooling maximized, AND when directed by the Chief Examiner.

Extra Comment Page (if needed)		
Time	Position	Applicant's Actions or Behavior

Facility: CLINTON POWER STATION Scenario No.: 02b Op-Test No.: 2000301

Examiners: _____ Operators: _____

Objectives: Exercise EOP-3, "Emergency Depressurization." Evaluate applicants while: ~~1) shifting recirc pumps to fast speed, 2) conducting a HPCS surveillance, 3) responding to a HPCS pump breaker failure, 4) responding to a reactor recirc FCV "A" drifting open,~~ 5) responding to a CRDH flow controller failure, ~~6) responding to LPCS/RHR-A water leg pump leak~~, 7) responding to a "B" CCW pump trip, 8) responding to a FWLCS master level controller failure~~, 9) responding to an earthquake, 10) responding to a RCIC turvine overspeed trip, and 11) responding to an ADS logic failure.~~

Initial Conditions: 36% power, NOP, NOT, EOC, Xenon building in from a down power maneuver. The motor driven feed pump is out of service.

Turnover: Unit is at 36% power. Xenon is building in as a result of a recent down power maneuver. You are to begin restoring power to 100%. Shift recirculation pumps to fast speed. After the pump shift and the plant is stabilized, conduct CPS No. 9051.01, HPCS Pump Operability/Water Leg Pump Check Valves Test (tank to tank). Operators are in place, standing by to support the surveillance. Engineering identified a potential problem with HPCS flow data during the last surveillance and wants to re-verify the data. The MDRFP is OOS for motor bearing replacement. New fuel is being loaded into the new fuel storage vault.

Event No.	Malf. No.	Event Type*	Event Description
~~1~~		~~R~~	~~Shift recirculation pumps to fast speed~~
~~2~~		~~N~~	~~HPCS Surveillance (tank to tank) CPS 9051.01, Section 8.3~~
~~3~~		~~C~~	~~HPCS Pump breaker failure~~
~~4~~		~~C~~	~~Rx recirculation "A" flow control valve drifts open~~
5		I	CRDH Flow Controller, C11-R600, fails
~~6~~		~~C~~	~~LPCS/RHR-A water leg pump leak~~
7		C	Trip of "B" CCW pump
8		I	FWLCS master level controller fails to +40"
~~9~~		~~M~~	~~Earthquake:~~ ~~- MSIVs shut~~ ~~- Leak in condensate system~~ ~~- Small leak in Rx recirculation system~~ ~~- Leak from drywell into containment~~
~~10~~		~~C~~	~~RCIC overspeed trip after auto start~~
~~11~~		~~C~~	~~ADS logic failure~~

* (N)ormal, (R)eactivity, (I)nstrument, (C)omponent, (M)ajor

Event No.: 1 (RO - Reactivity Change) Shift Recirculation Pumps to Fast Speed.
NOT USED

Time	Position	Applicant's Actions or Behavior
	SRO	~~Conduct crew brief. Up to Step 8.4.3, CPS 3004.01 has been completed. **Note to Examiner -** The detailed Reactivity Management brief was completed prior to the crew taking the shift.~~ ~~Transfer pumps to fast IAW CPS 3302.01, Reactor Recirculation, step 8.1.2.~~ ~~Verify Flow Control Line ≥ 60%. (Step 8.1.2.1, CPS 3302.01)~~ ~~Direct **local** operators to bypass the FW Flow FCV cavitation / RR pump downshift interlock for each pump. Annunciators 5003-4C/4J, RECIRC MG A(B) INTLK BYPASS will be received.(Step 8.1.2.2, CPS 3302.01)~~ ~~Direct RO/BOP to Reset/Verify Reset FCV & pump interlocks. (Step 8.1.2.3, CPS 3302.01)~~ ~~Direct RO to Reset FCV motion control inhibit (step 8.1.2.3.a, CPS 3302.01)~~ ~~Direct FCV to be positioned at minimum position for pump being shifted to fast. Direct the other FCV be adjusted to maintain Rx power constant and Feedwater flow ≥ 3.13 mlbm/hr (~ 29.4 % RTP). (Step 8.1.2.4, CPS 3302.01)~~ ~~Make notifications: RP of potential change in rad levels, Security the perimeter lighting may be effected, plant wide Gaitronics announcement. (Step 8.1.2.7, CPS 3302.01)~~ ~~Direct RO to transfer pumps to fast speed (one at a time). (Step 8.1.2.9, CPS 3302.01)~~

Event No: 1 (RO-Reactivity Change) Shift Recirculation Pumps to Fast Speed. **(CONTINUED)** **NOT USED**		
Time	Position	Applicant's Actions or Behavior
	RO	~~Verify Flow Control Line ≥ 60% using figure 1, CPS 3302.01.~~ ~~Verify Annunciator 5003-4C/4J, RECIRC MTR A (B) AUTO TRIP OR XFER TO LS window has alarmed when interlock has been bypassed. (Step 8.1.2.2, CPS 3302.01)~~ ~~When directed, reset/Verify Reset FCV & pump interlocks. (Step 8.1.2.3, CPS 3302.01)~~ ~~When directed, reset FCV motion control inhibit (step 8.1.2.3.a, CPS 3302.01)~~ ~~• Zero the A(B) loop SERVO ERROR~~ ~~• Depress the A(B) FCV A/B Motion Inhibit Reset. Verify the lead HPU becomes operational, and FCV motion is no longer inhibited.~~ ~~When directed, position the FCV at minimum for pump being shifted to fast. (step 8.1.2.4, CPS 3302.01)~~ ~~When directed, adjusted the other FCV to maintain Rx power constant and Feedwater flow ≥ 3.13 mlbm/hr (~ 29.4 % RTP). (step 8.1.2.4, CPS 3302.01)~~ ~~(**NOTE to Examiner** - This step is also applicable after the pump shift to fast speed.)~~ ~~When directed, shift pumps to fast speed (one at a time). (step 8.1.2.9, CPS 3302.01)~~ ~~• Transfer the RR pump to fast speed by closing Recirc Pump A(B) Drive Motor Bkr 5A(5B), and observe that the LFMG A(B) Gen Bkr 2A(2B) opens prior to the 5A(5B) breaker closing.~~ ~~• Verify that the LFMG A(B) Mtr Bkr 1A(1B) opens.~~
	BOP	~~Monitor plant parameters as directed by SRO.~~ ~~When directed, adjusted the other FCV to maintain Rx power constant and Feedwater flow ≥ 3.13 mlbm/hr (~ 29.4 % RTP).~~ ~~When directed, monitor pump seal key parameters.~~

Event No: 1 (RO-Reactivity Change) Shift Recirculation Pumps to Fast Speed. **(CONTINUED)**		
Time	Position	Applicant's Actions or Behavior
	SRO	~~After pumps shifted to fast, direct STA to remove the substitute value from and restore points B33NA003 and/or 004, RR Pump A (B) Motor Power for the RR pump transfer to fast speed. (step 8.1.2.14, CPS 3302.01)~~ ~~Direct increase in power w/ FCV to between 35 & 39% to clear the cavitation interlocks.~~ ~~Direct **local** operators to return the FW Flow FCV cavitation / RR pump downshift interlock for each pump to normal. Verify Annunciator 5003-4C/4J, RECIRC MTR A (B) AUTO TRIP OR XFER TO LS window has cleared when interlock has been returned to normal. (Step 8.1.2.15, CPS 3302.01)~~ ~~Direct RO/BOP to verify cavitation interlocks are cleared.~~
	RO	~~When directed, increase in power w/ FCV to between 35 & 39% to clear the cavitation interlocks. Verify Annunciator 5003-4C/4J, RECIRC MTR A (B) AUTO TRIP OR XFER TO LS window has cleared when interlock has been returned to normal. (Step 8.1.2.15, CPS 3302.01)~~ ~~When directed, verify cavitation interlocks are cleared.~~
	BOP	~~Monitor plant parameters as directed by SRO.~~
	CUE	~~When (1) both pumps have been shifted to FAST, (2) the cavitation interlocks are cleared, (3) the plant is stable, AND (4) with the Chief Examiner's concurrence, begin Event 2 (HPCS Surveillance).~~

Event No.: 2 - (Normal Evolution) HPCS Surveillance (Tank to Tank) **NOT USED**		
Time	Position	Applicant's Actions or Behavior
	SRO	~~When plant stable, conduct HPCS Pump Operability / Water Leg Pump Check Valves Test (RCIC Tank to RCIC Tank) per CPS 9051.01, step 8.3. Steps 8.3.1 to 8.3.7.2 were completed and signed off on the previous shift. Operators are standing by to support the surveillance.~~ ~~Direct BOP to start HPCS pump and continue the test per CPS 9051.01.~~ ~~**Note to Examiner** - Steps 8.3.11.1 to 8.3.14.6 are local field data gathering actions. The simulator operator will time compress.~~ ~~After field data has been collected, direct BOP to verify valve stem disk attachment per steps 8.3.15.1 & 8.3.15.2 AND then stop the HPCS pump per step 8.3.15.16.~~
	BOP	~~Start HPCS pump and continue test per and verify the HPCS minimum flow valve to Suppression Pool, 1E22-FO12, opens. (Step 8.3.8, CPS 9051.01)~~ ~~Simultaneously, slowly throttle open both1E22-F010 and 1E22-F011, HPCS First and Second Test Vlv To Storage Tank, and increase flow to approximately 5050 gpm (Step 8.3.9)~~ ~~Verify minimum flow valve (FO-12) closes. (Step 8.3.10.1)~~ ~~**Note to Examiner** - Steps 8.3.11.1 to 8.3.14.6 are local field data gathering actions. The simulator operator will time compress.~~ ~~Verify valve disk attachment to stem and the anti-rotation device is intact (8.3.15.1 & 8.3.15.2)~~ ~~• Reduce running flow from 5050 gpm to 4800 gpm by positioning 1E22-F010. Increase running flow to 5050 gpm by repositioning 1E22-F010.~~ ~~• Reduce running flow from 5050 gpm to 4800 gpm by positioning 1E22-F011. Increase running flow to 5050 gpm by repositioning 1E22-F011.~~ ~~Simultaneously close 1E22-F010 and 1E22-F011 in a slow controlled manner until the HPCS Pump Min Flow To Suppr Pool Valve 1E22-F012 opens, then fully close 1E22-F010 and 1E22-F011. (Step 8.3.15.3)~~ ~~Stop the HPCS pump (Step 8.3.16)~~ ~~Verify the minimum flow valve closes (Step 8.3.17)~~
	RO	~~Monitor plant parameters as directed by SRO.~~
	CUE	~~When HPCS pump is secured, EVENT 3 (HPCS pump breaker failure) will actuate.~~

Event No.: 3 (SRO-TS) HPCS Pump Breaker Failure (smoke from cubicle) when pump is secured. **Note to Examiner** - This is NOT a BOP/RO component failure.

NOT USED

Time	Position	Applicant's Actions or Behavior
	CUES	• ~~When HPCS pump is secured, EVENT 3 (HPCS pump breaker failure) will actuate.~~ • ~~1 to 2 minutes after pump is secured, a local area operator will contact control room to report a smell of burnt insulation in the area of the HPCS pump breaker cubicle.~~ • ~~~ 5 min after maintenance is contacted to investigate, report back that visual inspection indicated the trip relay appeared burnt.~~
	BOP	~~Report that control power lights for HPCS pump switch has gone out.~~ ~~Report Alarm Windows~~ • ~~5062, 7A, DIV 3TRIPPING CONTROL POWER FAILURE .~~ • ~~5062, 7B, HPCS not ready for auto start/bkr in lower position.~~ ~~ARP 5062, 7A~~ • ~~Check 125V DC MCC 1C voltage on DC MCC 1C VOLTAGE on 1H13-P601.~~ • ~~Dispatch an operator to the control power fuses to determine and replace any blown fuses.~~
	SRO	~~Direct BOP to carry out actions in ARP 5062, 7A & 7B.~~ ~~Direct local area operators to report any unusual indications related to HPCS pump or circuit breaker.~~ ~~Refer to TS LCOs:~~ ~~3.5.1.B.1 - Verify RCIC operable (administratively) w/in 1 hour.~~ ~~3.5.1.B.2 - Restore HPCS to operable w/in 14 days.~~ ~~3.8.4 B.1 - Verify Div 3 or 4 DC electrical power subsystem operable. If inoperable, Immediately declare HPCS inoperable.~~ ~~3.8.9 E.1 - If one or more Div 3 or 4 DC uninterruptible AC bus electrical power distribution subsystems inoperable, Immediately declare HPCS inoperable.~~ ~~Declare HPCS inoperable.~~
	RO	~~Monitor plant parameters as directed by SRO.~~
	CUE	~~After SRO has declared HPCS inoperable AND when directed by the Chief examiner, enter Event 4 (recirculation FCV "A" drifts open).~~

Event No. 4 - (RO - C) Rx recirculation "A" flow control valve (FCV) drift open. **NOT USED**		
Time	Position	Applicant's Actions or Behavior
	CUE	~~After SRO has declared HPCS inoperable AND when directed by the Chief examiner, enter Event 4 (recirculation FCV "A" drifts open).~~
	RO	~~Report Rx power increasing and generator load increasing w/out operator action. Report recirc flow mismatch. Report "A" FCV motion.~~ ~~When directed, lock up the A-FCV. Rotate collar on HPU-A shutdown Pushbutton and Arm and Depress the pushbutton.~~ ~~Report the value of the recirc loop mismatch.~~ ~~Verify the plant is operating w/in the Stability Control & Power/Flow Map limits.~~
	SRO	~~Refer to CPS 4008.01, Abnormal Coolant Flow.~~ ~~Direct RO to lock up the A-FCV to stop FCV motion.~~ ~~Verify the plant is operating w/in the Stability Control & Power/Flow Map limits.~~ ~~Refer to TS 3.4.1 for recirculation loop flow mismatch (≤ 10% mismatch w/ power < 70% thermal).~~
	BOP	~~Monitor plant parameters as directed by SRO.~~
	CUE	~~After "A" FCV has been locked up and SRO has reviewed TS AND~~ when directed by the Chief examiner, enter Event 5 (CRD Hydraulic Flow Controller Fails in Auto (CRD FCV goes shut).

Event Nos.: 5 (BOP-C) CRD Hydraulic Flow Controller Fails in Auto (CRD FCV goes shut)		
Time	Position	Applicant's Actions or Behavior
	CUES	After "A" Recirc FCV has been locked up and SRO has reviewed TS AND when directed by the Chief examiner, enter Event 5 (CRD Hydraulic Flow Controller Fails in Auto (CRD FCV goes shut). **Note to Examiner** - Initially no alarms. High CRD temps is first alarm. When asked, the simulator operator will report that one rod in alarming due to high temperature and the others are increasing.
	BOP	Report abnormal CRD hydraulic parameters: • low CRD Cooling water flow indication (C11-R605). • Cooling water d/p near zero (C11-R603). • CRD flow control valve A&B indicating lights indicate valves are shut. • Report that the CRD hydraulic controller for the FCVs appears to have failed. When directed, place the CRD hydraulic FCV in manual and restore cooling flow to ~ 40 gpm.
	SRO	Direct RO to carry out the actions in ARP 5006, 1G. Direct BOP to investigate abnormal CRD hydraulic indications. Refer to CPS 3304.01, Control Rod Hydraulic & Control, Section 8.3.1, CRD High Operating Temperature. Direct the BOP to place the CRD hydraulic FCV in manual and restore cooling flow to ~ 40 gpm.
	RO	Report Alarm Window, 5006 - 1G, CRD Hydraulic Temperature High. • RO to call for **local** recorder to determine which CRD is alarming. (SEE CUE)
	CUE	After the CRD Hydraulic Flow Controller has been placed in manual and CRD parameters are stable AND when directed by the Chief Examiner, enter Event 6 (LPCS/RHR-A Water Leg Pump Leak.)

Event 6.: (SRO-TS) LPCS/RHR-A Water Leg Pump Leak.
Note to Examiner - This is NOT a BOP/RO component failure. Not Used

Time	Position	Applicant's Actions or Behavior
	CUE	After the CRD Hydraulic Flow Controller has been placed in manual and CRD parameters are stable AND when directed by the Chief Examiner, enter ~~Event 6 (LPCS/RHR-A Water Leg Pump Leak.)~~
	BOP	~~Report Alarms:~~ • ~~5063-3G, LPCS PUMP DISCHARGE PRESS ABNORMAL. (Low pressure alarm @ ~ 35 psig.)~~ • ~~5064-5F, RHR PUMP A DISCHARGE PRESSURE ABNORMAL. (Low pressure alarm @ ~ 58 psig.)~~ ~~Report LPCS/RHR-A water leg pump indicates running.~~ ~~Report A-RHR HX pressure is ~ 15 psig. (Normally is 40 - 45 psig.)~~ ~~When directed, secure LPCS/RHR-A water leg pump.~~
	SRO CUE	~~Direct BOP to carry out the actions in ARP 5063-3G & 5064-5F.~~ ~~Dispatch local area operator to investigate.~~ ~~**LOCAL OPERATOR WILL REPORT PUMP FLOW NOISE FROM PUMP**~~ ~~Direct BOP to secure LPCS/RHR-A water leg pump.~~ ~~Refer to TS 3.5.1.H (HPCS & LPCS inoperable which is TS 3.0.3)~~ ~~Make preparations for plant shutdown IAW CPS 3006.01, Unit Shutdown.~~
	RO	~~Monitor plant parameters as directed by SRO.~~
	CUE	~~After SRO reports that plant is in TS 3.0.3 and has made decision to conduct a controlled shutdown~~ AND when directed by the Chief Examiner, enter Event 7 (Trip of "B" CCW pump).

Event No.: 7 (BOP-C) Trip of the "B: CCW Pump.		
Time	Position	Applicant's Actions or Behavior
	CUE	After SRO reports that plant is in TS 3.0.3 and has made decision to conduct a controlled shutdown AND when directed by the Chief examiner, enter Event 7 (Trip of "B" CCW pump).
	BOP	Report Alarm 5040 -1B: AUTO TRIP COMPONENT COOLING WATER PUMP. • With no CCW pumps running, scram the Rx and w/in 1 minute, emergency recirc loop shutdown per CPS 3302.01. • With only 1 CCW pump running, start a standby pump per CPS 3203.01, Component Cooling Water System. When directed, start the standby CCW pump.
	RO	Report Alarms 5003 -3D & -3K: RECIRCULATION MOTOR "A" & "B" WINDING COOLING WATER FLOW LOW • If full CCW flow lost to one pump, w/in 1 minute, perform emergency recirc loop shutdown per CPS 3302.01. • If full CCW flow lost to both pumps, scram the Rx and w/in 1 minute, emergency recirc loop shutdown per CPS 3302.01. • Check component cooling water system for normal operation. • Monitor recirc pump/motor temperatures.
	SRO	Direct BOP to start a standby CCW pump. Direct RO/BOP to carry out actions in ARPs 5003-3D & -3K and 5040-1B. Direct RO/BOP to monitor plant parameters.
	CUE	When the standby CCW pump has been started and the plant is stable AND when directed by the Chief Examiner, enter Event 8 (FWLCS Master Level Controller Failure to + 40").

Event No. 8 (RO-I) FWLCS Master Level Controller Failure to + 40."		
Time	Position	Applicant's Actions or Behavior
	CUE	When the standby CCW pump has been started and the plant is stable AND when directed by the Chief Examiner, enter Event 8 (FWLCS Master Level Controller Failure to + 40").
	RO	Report RPV water level increasing. Report Alarm 5002-2Q, Rx Water Level Hi-Lo (High setpoint is 38.8") When directed, take manual control of the "A" RFP and stabilize RPV level. • Depress MANUAL on the RFP Flow M/A Stations and stabilize RPV level. CPS 3103.01, Feedwater System, Step 8.3.13 When directed, place the Startup Level Controller in service per Step 8.1.5, CPS 3103.01. * Verify/Place the S/U Level Controller in manual. * Verify RFP Start Mode Actuator Selector Switch is selected to a non-operating RFP. * Place/Verify the RFP Flow Controllers, **NOT** selected in previous step in manual. * Adjust the S/U Level Controller % output to match the RFP Flow Controller % output. * Using the RFP Start Mode Actuator Selector Switch, select the desired TURB or VALVE pushbutton. * Null and place the S/U Level Controller in automatic by adjusting the thumb-wheel until the Input pointer is at the setpoint, then press AUTO pushbutton.
	SRO	Direct RO to take manual control of "A" RFP and restore RPV level to ~ 36" Direct RO to carry out actions in ARP 5002-2Q. Refer to CPS 3103.01, Feedwater System, Step 8.3.13, High/Low RPV Level. Direct the RO to place the Startup Level Controller in service per CPS 3103.01, Step 8.1.5, Placing the Startup Level Controller in service OR Step 8.1.9, Transferring Control from the Master Level Controller.
	BOP	Monitor plant parameters as directed by SRO.
	CUE	~~When the S/U Level Controller is in Auto and RPV level is stable AND when directed by the Chief Examiner, enter Event 9 (Earthquake).~~

Event Nos. 9, Earthquake with a) MSIVs shutting, b) Condensate System Leak, c) Rx Recirculation system leak, and d) leak from Drywell into Containment. **NOT USED**		
Time	Position	Applicant's Actions or Behavior
	CUE	~~When the S/U Level Controller is in Auto and RPV level is stable AND when directed by the Chief Examiner, enter Event 9 - Earthquake a) MSIVs shutting [30 sec delay], b) Condensate System Leak [30 sec delay], c) Rx Recirculation system leak [5 min delay], d) leak from Drywell into Containment [5 min delay].~~ ~~**Note to Examiners** - When the earthquake annunciators alarm, the Examiner will verbally cue the Applicant that there is ground motion.~~
	RO/ BOP	~~Report alarms:~~ ~~5009 - 2A: ACCELERATION EXCEEDED AT SEISMIC SWITCH OPERATING BASIS EARTHQUAKE~~ ~~5009 - 2B: ACCELERATION EXCEEDED OPERATING BASIS EARTHQUAKE~~ ~~5009-3A: ACTIVATED SEISMIC RECORDER~~
	SRO	~~Refer to CPS No. 4301.01, EARTHQUAKE.~~ ~~• Check for any unexpected changes in plant parameters.~~
	RO	~~Report MSIVs closed **(This occurs ~ 30 sec after seismic event.)**~~ ~~CPS 4100.01 Rx Scram: Take Mode switch to Shutdown and verify shutdown criteria:~~ ~~• All rods are in to at least 02; OR no more than one rod out past 02, with all other rods in at 00; OR a qualified Rx Eng has determined the Rx will remain shutdown under all conditions without boron.~~ ~~Perform actions in CPS 4100.01, Rx Scram.~~
	BOP	~~Repot MSIVs closed. **(This occurs ~ 30 sec after seismic event.)**~~ ~~Sound Containment Evacuation Alarm and make announcement.~~
	SRO	~~Direct RO to take Mode switch to Shutdown and verify shutdown criteria.~~ ~~Direct RO/BOP to take immediate actions in CPS 4100.01, Rx Scram.~~ ~~Enter EOP 1, RPV Control.~~

Event Nos. 9, Earthquake with a) MSIVs shutting, b) Condensate System Leak, c) Rx Recirculation system leak, and d) leak from Drywell into Containment. **(CONTINUED)**
Event 10 - RCIC Trips on Overspeed during Auto (or Manual) S/U. (It will not reset.)
NOT USED

Time	Position	Applicant's Actions or Behavior
	CUE	~~~ 30 sec after seismic event, the leak in the condensate system will begin. The MCR will receive a telephone report from an area operator that there is a leak in the cond system somewhere between the cond pumps and cond booster pumps.~~
	BOP	~~Report alarm 5013-4D, HIGH-HIGH LEVEL FLOOR/EQUIPMENT DRAIN SUMP-TURBINE BUILDING.~~ ~~Report that Cond Polisher Inlet Flow Meter reading abnormally high (~750gpm).~~ ~~When directed, stabilize RPV pressure below 1035 psig using SRVs.~~ ~~When directed, start RCIC for level/pressure control. Report that RCIC trips on overspeed and will not reset from control room.~~
	RO	~~When directed, maintain RPV level between Level 3 (8.9") & Level 8 (52"). **Note to Examiner** - No high pressure injection source available.~~ ~~When directed, maximize CRD injection to restore/maintain RPV level.~~
	SRO	~~Direct BOP to stabilize RPV pressure below 1035 psig using SRVs.~~ ~~Direct BOP to start RCIC for level/pressure control.~~ ~~Direct local operator to reset RCIC overspeed trip.~~ ~~Direct RO to maintain RPV level between Level 3 & Level 8.~~ ~~Direct RO to maximize CRD injection to restore/maintain RPV level.~~
	CUE	~~~ 5 min after seismic event: Rx Recirculation system leak AND leak from Drywell into Containment.~~

Event Nos. 9 &10 **(CONTINUED)**
Event 11 - ADS Logic Failure (individual valves will open manually) **NOT USED**

Time	Position	Applicant's Actions or Behavior
	CUE	~~~ 5 min after seismic event: Rx Recirculation system leak AND leak from Drywell into Containment.~~
	RO/ BOP	~~Report Drywell / Containment Parameters increasing (temperature and pressure) and Suppression Pool Level increase.~~ ~~When directed, start Mixing Compressor to reduce Drywell pressure.~~ ~~When directed, inhibit ADS timer.~~ ~~When directed, initiate Containment Spray per CPS 3312.01, RHR System.~~ ~~When Drywell pressure exceeds 1.68 psig, verify DG & ECCS auto starts and verify Auto isolations.~~ ~~When directed, initiate SLC to maintain level above TAF.~~
		~~Enter EOP - 6, Primary Containment Control when parameters exceed entry conditions.~~ ~~• DW/Containment Pressure > 1.68 psig~~ ~~• DW Temperature > 150 deg. F~~ ~~• Containment Temperature > 122 deg. F~~ ~~• Suppression Pool Level > 19 ft., 5 in.~~ ~~Direct RO/BOP to initiate/maximize containment/drywell cooling~~ ~~SRO **MAY** direct BOP to start Mixing Compressor prior to Drywell pressure exceeding 1.68 psig.~~ ~~If unable to maintain level above Level 3, then maintain level above TAF (-162"). Inhibit ADS timer. Use alternate injection sources (Detail E) Inject SLC.~~ ~~SRO **MAY** start Containment Spray per CPS 3312.01, RHR System, to control containment pressure.~~ ~~When Drywell pressure exceeds 1.68 psig, Direct RO/BOP to verify DG & ECCS auto starts and verify Auto isolations.~~

Event Nos. 9 &10 **(CONTINUED)**
Event 11 - ADS Logic Failure (individual valves will open manually) **NOT USED**

Time	Position	Applicant's Actions or Behavior
	SRO	~~Direct Emergency Depressurization (EOP-3) when level drops to TAF (-162")~~ ~~Direct RO/BOP to prevent LPCS & LPCI injection not needed for core cooling.~~ ~~Direct RO/BOP to initiate ADS (it will not initiate).~~ ~~Direct RO/BOP to manually open 7 SRVs to depressurize the RPV.~~ ~~Depressurize until < Shutdown Cooling Interlock pressure (104 psig) OR until RPV level > TAF.~~
	RO BOP	~~When directed, prevent LPCS & LPCI injection not needed for core cooling.~~ ~~When directed, initiate ADS (it will not initiate). Report that ADS did not initiate.~~ ~~When directed, manually open 7 SRVs to depressurize the RPV.~~
	CUE	~~End Scenario - RPV depressurized and level maintained above TAF, DW/Containment cooling maximized, AND when directed by the Chief Examiner.~~

Extra Comment Page (if needed)

Time	Position	Applicant's Actions or Behavior

UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION III
801 WARRENVILLE ROAD
LISLE, ILLINOIS 60532-4351

August 21, 2000

MEMORANDUM TO: The File

FROM: Dell R. McNeil, Chief Examiner

SUBJECT: CLINTON INITIAL EXAMINATION 06/2000

Clinton Power Station management staff did not submit post-examination comments for subject initial examination.

FINAL AS-ADMINISTERED WRITTEN EXAMINATION

FOR CLINTON THE WEEK OF JUNE 12, 2000

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

Applicant Information	
Name: MASTER	Region: III
Date: JUNE 17, 2000	Facility/Unit: Clinton Power Station
License Level: RO	Reactor Type: GE
Start Time: 0800	Finish Time: 1300

Instructions

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

Applicant Certification

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

_____
Applicant's Signature

Results		
Examination Value	100.0	Points
Applicant's Score	_____	Points
Applicant's Grade	_____	Percent

ANSWER SHEET

If you change your answer, write your selection in the blank.

MULTIPLE CHOICE

001	a	b	c	d	___	024	a	b	c	d	___	023	a	b	c	d	___
002	a	b	c	d	___	025	a	b	c	d	___						
003	a	b	c	d	___	026	a	b	c	d	___						
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012	a	b	c	d	___	035	a	b	c	d	___						
013	a	b	c	d	___	036	a	b	c	d	___						
014	a	b	c	d	___	037	a	b	c	d	___						
015	a	b	c	d	___	038	a	b	c	d	___						
016	a	b	c	d	___	039	a	b	c	d	___						
017	a	b	c	d	___	040	a	b	c	d	___						
018	a	b	c	d	___	041	a	b	c	d	___						
019	a	b	c	d	___	042	a	b	c	d	___						
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021	a	b	c	d	___	044	a	b	c	d	___						
022	a	b	c	d	___	045	a	b	c	d	___						

ANSWER SHEET

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ANSWER SHEET

If you change your answer, write your selection in the blank.

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(********** END OF EXAMINATION **********)

WRITTEN EXAMINATION GUIDELINES

1. After you complete the examination, sign the statement on the cover sheet indicating that the work is your own and you have not received or given assistance in completing the examination.

2. To pass the examination, you must achieve a grade of 80.00 percent or greater; grades will not be rounded up to achieve a passing score. Every question is worth one point.

3. The time limit for completing the examination is five hours.

4. You may bring pens, pencils, and calculators into the examination room. Use dark pencil or ink to mark your answers. If you need to erase, ensure you erase completely. Questions not gradable because of inadequate erasure will be marked as incorrect. If you are using ink and decide to change your original answer, draw a single line through the error, enter the desired answer in the line provided, and initial the change.

5. Print your name in the blank provided on the examination cover sheet and the answer sheet. You may be asked to provide the examiner with some form of positive identification.

6. Mark your answers on the answer sheet provided. You should not leave any question blank.

7. If you have any questions concerning the intent or the initial conditions of a question, do not hesitate asking them before answering the question. Ask questions of the NRC examiner or the designated facility instructor only. When answering a question, do not make assumptions regarding conditions that are not specified in the question unless they occur as a consequence of other conditions that are stated in the question. For example, you should not assume that any alarm has activated unless the question so states or the alarm is expected to activate as a result of the conditions that are stated in the question.

8. Restroom trips are permitted, but only one applicant at a time will be allowed to leave. Avoid all contact with anyone outside the examination room to eliminate even the appearance or possibility of cheating.

9. When you complete the examination, bring the cover sheet and your answer sheets to the NRC examiner or proctor. Remember to sign the statement on the examination cover sheet indicating that the work is your own and that you have neither given nor received assistance in completing the examination. Leave all other papers at your desk.

10. After you have turned in your examination, leave the examination area as defined by the proctor or NRC examiner. If you are found in this area while the examination is still in progress, your license may be denied or revoked.

11. Do you have any questions?

QUESTION: 001 (1.00)

The reason for maintaining suppression pool temperature below the Heat Capacity Limit (Figure P on EOP-6, Primary Containment) is . . .

a. to provide adequate subcooling in the pool to prevent chugging of the SRV tailpipes and subsequent damage to the SRVs and pool.

b. to assure the suppression pool can absorb sufficient energy to prevent exceeding the containment design temperature.

c. to assure the containment design pressure will not be exceeded due to compression of the non-condensable gasses released by the elevated water temperature.

d. to provide adequate margin against boiling and subsequent release of radionuclides scrubbed from the primary coolant during the design basis accident.

QUESTION: 002 (1.00)

Given the following:

- The plant is in Mode 5.
- Fuel is being moved in the RPV.
- Shutdown Cooling (SDC) is being provided by RHR-B through the LPCI injection path.

SDC operation in this lineup is minimized due to the potential for . . .

a. the RHR pump discharge relief valve opening and injecting RPV coolant into the suppression pool.

b. damage to the RHR heat exchanger tubes due to excessive vibration from high flow.

c. damage to the fuel assemblies in the vicinity of the LPCI nozzle.

d. damage to the LPCI nozzle due to thermal fatigue and vibration.

QUESTION: 003 (1.00)

In the Water Level branch of EOP-8, "Secondary Containment Control," there is a decision block that requires action if a primary system is discharging into secondary containment AND the discharge cannot be isolated. A system is considered a Primary System in this step if it is:

a. inside primary containment and will be challenged by the adverse Secondary Containment conditions

b. physically connected to the reactor vessel and reducing reactor pressure will decrease the break flow.

c. needed to assure adequate core cooling and to maintain and/or recover reactor vessel level and pressure

d. needed to shutdown and/or maintain the reactor shutdown and penetrates the primary containment

QUESTION: 004 (1.00)

Given that the plant was operating at 100% Rated Thermal Power (RTP) and the operating CRD pump tripped. Choose the statement which describes the POTENTIAL CONSEQUENCES of immediately restarting one of the CRD pumps without first closing the Control Rod Drive Hydraulic System Flow Control Valve (FCV).

a. No consequences. The FCVs automatically close when the CRD pump trips.

b. Multiple control rods may drift due to the pressure surge in the cooling water header.

c. 1C11-F083, CRD supply to containment outboard isolation valve, will shut on high differential flow.

d. RPV water level indication (notching) may be affected due to the pressure surge in the reference leg backfill.

QUESTION: 005 (1.00)

At the P680 panel, a control rod was being withdrawn from position 12 to position 24. When the control rod reached position 24, the operator identified that the digital position indication for the selected rod alternately displayed a numerical rod position and the letters "FF." Based on the symptoms provided, RC&IS was indicating that . . .

a. the Rod Pattern Controller (RPC) was no longer evaluating the rod.

b. one of the Position Indicator Probes (PIP) had been bypassed.

c. one of the PIPs Reed Switch had failed.

d. both of the PIPs Reed Switches had failed.

QUESTION: 006 (1.00)

Given that following conditions:

- All of the required conditions for an automatic actuation of ADS have been met.
- Blowdown is in progress.

If ALL of the low pressure ECCS pumps trip off, which one of the following describes how the Automatic Depressurization System (ADS) is affected?

a. All ADS valves will shut and a low pressure ECCS pump must be restarted to continue the blowdown

b. All ADS valves will shut. The blowdown can be continued by depressing the Channel A & B manual initiation pushbuttons.

c. The blowdown will continue and will stop when the initiation signal has cleared and the ADS Logic Seal-in Reset pushbutton is depressed.

d. The blowdown will continue and will stop automatically when RPV level is greater than Level 1 and the ADS Inhibit Switches are placed in "Inhibit."

QUESTION: 007 (1.00)

The Reactor Recirculation pumps were shifted to fast speed during a reactor startup to full RTP. Immediately after the pump shift, the LPCS OUT OF SERVICE annunciator alarmed. The investigation determined the alarm was due to the differential pressure between the LPCS sparger and the . . .

a. HPCS sparger.

b. LPCI-A injection line.

c. CRD reference leg keep fill line.

d. above core plate d/p pressure line.

QUESTION: 008 (1.00)

A coupled control rod has been fully withdrawn. The indications for that individual control rod on the P680 are . . .

a. "Red" full out light and "--" rod position display.

b. "Red" full out light and " 48" in the rod position display.

c. "Rod Drift" alarm and " 48" in the rod position display.

d. "Rod Overtravel" alarm and "--" in the rod position display.

QUESTION: 009 (1.00)

A reactor startup was in progress with the intermediate range monitors (IRMs) on Range 2. The operator, while withdrawing source range monitor detectors, inadvertently selected the IRM "A" detector drive unit.

Which of the following describes the results of selecting the IRM "A" detector drive unit?

a. A ½ scram signal is generated.

b. A rod block signal is generated.

c. The IRM "A" detector will NOT withdraw.

d. An IRM Upscale Trip signal is generated.

QUESTION: 010 (1.00)

During steady state power operations, the APRM Gain Adjustment Factor (AGAF) for APRM-C is 1.04. The indication from APRM C is ..... because ..... .

SELECT the choice that fills in the blanks.

a. conservative / indicated power is GREATER THAN actual thermal power.

b. NON-conservative / actual thermal power is GREATER THAN indicated power.

c. conservative / indicated power is LESS THAN actual thermal power.

d. NON-conservative / actual thermal power is LESS THAN indicated power.

QUESTION: 011 (1.00)

Given the following conditions:

- The Automatic Depressurization System (ADS) has automatically initiated.
- All ADS valves are open.
- Reactor level is -155 inches and lowering.
- Drywell pressure is 3.0 psig and slowly lowering.

If the ADS logic seal in reset pushbuttons (A/E & B/F) are depressed, the ADS valves will . . .

a. immediately close and will remain closed.

b. immediately close, but re-open after 105 seconds.

c. remain open, but close after 105 seconds.

d. remain open, but close after 7 minutes and 45 seconds

QUESTION: 012 (1.00)

Given the following conditions:

- The plant was operating at 100% RTP.
- RHR-A was operating in the suppression pool cooling mode.
- A full, valid RPV water Level 1 signal was generated.

The RHR-A system will realign as follows:

	HR-A HX Bypass Valve F048A	RHR-A Test Valve to Pool F024A
a.	Full Open	Close
b.	Full Open	Remain as is
c.	Remain as is	Remain as is
d.	Remain as is	Close

QUESTION: 013 (1.00)

During performance of core alterations, RHR-A was operating in the suppression pool cooling mode and fuel pool cooling and cleanup (FC) was in operation cooling the upper and lower fuel pools. If the refueling bellows developed a large leak, which one of the following would describe the immediate effect on the FC surge tank's level indication?

a. Level goes up

b. Level goes down

c. Level remains the same

d. Level goes up, then down (over a 30 minute period)

QUESTION: 014 (1.00)

Both of the two keylock handswitches for one of the SRVs with an ADS function were placed in the OFF position. Which of the following describes the condition of the valve?

	Pressure Relief Mode	ADS mode
a.	Operate	Operate
b.	NOT operate	NOT operate
c.	Operate	NOT Operate
d.	NOT operate	Operate

QUESTION: 015 (1.00)

The unit is at 100% RTP. While on watch in the control room you overheard the Shift Manager (SM) and a Mechanical Maintenance Engineer talking about a test the engineer needs to perform. The Engineer told the SM that during the test he needed to open 1E32-F015A, MSIV A Inbd Bleed Line Test Root, and 1E32-F016A, MSIV A Inbd Bleed Line Test Shutoff, simultaneously, then shut the valves. After the "A" valves were tested, the corresponding "B," "C," and "D" valves would be tested. You should tell the SM that you will . . .

a. NOT allow the test, until power has been reduced to <80% RTP.

b. allow the test, but only if a valve lineup (restoration) is completed after the test.

c. allow the test, but NOT on the "B" and "D" trains because of their unique interlocks.

d. NOT allow the test, the valves cannot be opened at power, as steam may be dumped through the valves.

QUESTION: 016 (1.00)

Given the following conditions:

- The plant is at 100% RTP.
- The maximum combined flow is set at 115%
- The load limit is set at 110%

If one of the turbine bypass valves fails open, the expected plant response is:
(steady state to steady state)

	Rx Pressure	Turbine Control Valve Position	Generator Load
a.	increases	close down	decreases
b.	decreases	close down	decreases
c.	increases	opens up	increases
d.	decrease	opens up	increases

QUESTION: 017 (1.00)

The Division 1 Battery Room ventilation system maintains a:

a. negative pressure to prevent hydrogen gas buildup above the flammability limit.

b. negative pressure to ensure the overall Auxiliary Building HVAC system flow is balanced.

c. positive pressure to ensure the room's dampers remain open if the exhaust fan trips.

d. positive pressure to ensure hydrogen gas be evenly distributed throughout the Auxiliary Building.

QUESTION: 018 (1.00)

Given the following conditions:

- 4160 kV Bus 1A1 has tripped.
- The Emergency Diesel Generator associated with 4160 Bus 1A1 failed to start.

Without operator action, select the ECCS pump(s) which be available under these conditions?

	RHR-A	RHR-B	RHR-C	LPCS
a.	Yes	No	No	Yes
b.	No	Yes	No	Yes
c.	No	Yes	Yes	No
d.	Yes	No	Yes	No

QUESTION: 019 (1.00)

Given that the plant was operating at 100% RTP. A malfunction occurred in the Off Gas System which resulted in moisture carryover into the Recombiner. The result of the moisture carryover is a/an _____(1)_____ in Recombiner Temperature and a/an _____(2)_____ in Hydrogen Concentration.

	(1)	(2)
a.	Increase	Increase
b.	Increase	Decrease
c.	Decrease	Increase
d.	Decrease	Decrease

QUESTION: 020 (1.00)

VC Train "A" was operating in the NORMAL mode when offsite power was temporarily lost to the vital buses. Vital bus power was subsequently restored by the emergency diesel generators. Which of the following describes the response of the control room HVAC to the loss of vital buses?

a. Neither train will automatically start.

b. VC train "A" will automatically start in the NORMAL mode.

c. VC train "B" will automatically restart in the NORMAL mode.

d. Both trains will automatically start in the HIGH RADIATION mode.

QUESTION: 021 (1.00)

The plant has been operating normally at 100% RTP for 221 days. The service/instrument air system is in its normal operating lineup. If a rupture were to occur in the containment instrument air piping resulting in a reduction in the service air dryer discharge pressure to 60 psig, which of the following would occur? (assume no operator action)

a. All three service air compressors would be running to attempt to restore air pressure to normal.

b. The plant chilled water system chillers will shut down.

c. All service air ring header isolation valves will shut except for the Aux/Fuel Bldg Isolation Valve, 1SA038.

d. Only the Turbine Building, Auxiliary/Fuel Building, Radwaste Building, and Control Building instrument air header isolation valves will shut.

QUESTION: 022 (1.00)

A reactor recirculation system pipe break has occurred and drywell hydrogen (H2) concentration indicated 1.0% on the H2/O2 monitoring system. This concentration of H2 will:

a. close the H2/O2 sample containment isolation valves.

b. actuate an alarm on the H2/O2 monitoring system.

c. align CGCS for hydrogen recombiner operation

d. shift the H2/O2 monitoring system to accident mode.

QUESTION: 023 (1.00)

Given the following conditions:

- The plant is operating at 30% power.
- The main turbine is synchronized to the grid.
- Some of the turbine bypass valves are open.
- Main condenser vacuum begins to lower.

CHOOSE the statement that describes the expected SEQUENCE of events to the lowering condenser vacuum condition. (assume no operator actions.)

a. The main turbine trips causing a reactor scram, then the MSIVs shut, then the bypass valves close.

b. The main turbine trips, then the MSIVs shut causing a reactor scram, then the bypass valves close.

c. The main turbine trips causing a reactor scram, then the bypass valves close, then the MSIVs shut.

d. The main turbine trips, then the bypass valves close, then the MSIVs shut causing a reactor scram.

QUESTION: 024 (1.00)

Given the following conditions:

- The reactor was operating at 100% RTP.
- The Main Steam Line (MSL) Tunnel high temperature alarm actuated.
- MSL Tunnel temperature continues to increase.

Based on MSL temperature ALONE and WITHOUT operator action, ____(1)____ will isolate immediately and ____(2)____ will isolate after 25 minutes.

	(1)	(2)
a.	RWCU	RCIC
b.	RCIC	RWCU
c.	RWCU	Main Steam
d.	Main Steam	RWCU

QUESTION: 025 (1.00)

While filling the position of "A" Reactor Operator, you request a short term relief of less than fifteen minutes. Under which of the following circumstances would a panel walkdown be REQUIRED as part of your turnover to the operator providing the temporary relief?

a. The relief operator did NOT attend the shift briefing.

b. There have been changes in plant conditions or equipment status since the shift briefing.

c. Surveillance testing is in progress.

d. Work is to be performed that may impact the watchstation during the relief period.

QUESTION: 026 (1.00)

Following a main generator load rejection from 100% reactor power, a reactor scram is initiated to reduce reactor power in anticipation of a . . .

a. reactor water level increase.

b. reactor water level decrease.

c. reactor pressure increase.

d. reactor pressure decrease.

QUESTION: 027 (1.00)

The reactor is operating at 85% RTP when supplemental fuel pool cooling is required. Which one of the following systems can be used to supplement the heat removal capability of the fuel pool cooling and cleanup system?

a. Residual Heat Removal

b. Shutdown Service Water

c. Fire Protection

d. Reactor Water Cleanup

QUESTION: 028 (1.00)

Given the following conditions:

- Reactor power is 98% RTP and slowly decreasing
- RPV level (NR) 35 inches and stable
- "A" recirculation loop flow and FCV position are stable
- "B" recirculation loop flow and FCV position are slowly decreasing

Which of the following is the appropriate operator response?

a. Adjust the "A" FCV to match flow with the "B" recirculation loop.

b. Wait for the "B" recirculation loop flow to stabilize and then match loop flows.

c. Trip the "B" recirculation pump if the difference between loop flows exceeds 15%.

d. Inhibit the motion of the "B" FCV.

QUESTION: 029 (1.00)

The plant was at 100% RTP with a normal electrical lineup when a plant transient resulted in the following:

- The reactor scrammed.
- The main turbine tripped.
- The RAT tripped on a fault pressure lockout.
- Both TDRFPs tripped.
- RPV level is -60 inches and slowly increasing

Which of the following describes the condition of the Emergency Diesel Generators (EDG)?

a. Division 3 EDG running unloaded. Division 1 and 2 EDGs remain in standby status.

b. Division 3 EDG remains in standby status. Divisions 1 and 2 EDGs running unloaded.

c. All three EDGs running unloaded.

d. All three EDGs remain in standby status.

QUESTION: 030 (1.00)

Given the following conditions:

- The Unit was operating at 100% RTP.
- The "B" feedwater level instrument is the controlling instrument.
- The "A" and "C" circulating water pumps are operating.

If loss of 125 volt DC MCC 1F occurred, which of the following would be the cause of the reactor scram? (assume no operator actions.)

a. MSIV closure due to low instrument air header pressure.

b. high reactor vessel level due to loss of level instrument.

c. main turbine trip due to loss of main generator exciter field.

d. low vacuum due to loss of circulating water pumps.

QUESTION: 031 (1.00)

An abnormal condition has resulted in the following plant conditions:

- Reactor power is 45% RTP.
- Main turbine load is 23%.
- Turbine bypass valves are partially open.
- Total main steam flow is 45%.
- Annunciator "TCV Fast Close and MSV Trip Byp" is lit.

Under these abnormal conditions, if a main turbine trip were to occur then . . .

a. the reactor would scram on high reactor pressure.

b. a scram would occur immediately as soon the turbine control valves begin to close.

c. the turbine bypass valves would open to maintain steam header pressure, and operations would continue at the same power level.

d. the turbine bypass valves would open to control steam header pressure, but the recirc flow control valves would close, automatically reducing reactor power.

QUESTION: 032 (1.00)

The plant is in Mode 4 with the RHR-B loop operating in the Shutdown Cooling (SDC) Mode. If a transient occurred which resulted in an increase of reactor pressure to 110 psig, the expected plant response is that the SDC Inboard and Outboard Isolation Valves: (assume no operator actions.)

a. close and the RHR-B pump trips.

b. remain open and the RHR-B pump trips.

c. close and the RHR-B pump continues to operate.

d. remain open and the RHR-B pump continues to operate.

QUESTION: 033 (1.00)

Damage to equipment from excessive moisture carryover is prevented by:

a. MSIV closure at Level 8.

b. HPCS system shutdown at Level 8.

c. main turbine trip after RCIC initiation.

d. turbine feedwater pump trip after HPCS initiation.

QUESTION: 034 (1.00)

In EOP-1, RPV Control, the operating crew is asked if RPV level can be restored and maintained above -193 inches. A level of -193 inches corresponds to . . .

a. minimum core submergence RPV water level.

b. minimum steam cooling RPV water level.

c. instrument zero on the Fuel Zone level indication.

d. instrument zero on Wide Range level indication.

QUESTION: 035 (1.00)

EOP-6, Primary Containment Control, has been entered due to high drywell pressure. The Drywell/Containment Pressure branch prohibits using the hydrogen mixers if suppression pool level is below 13 ft., 1 in.

The pool level must be greater than or equal to 13 ft., 1 in. to:

a. provide adequate back pressure on the mixer discharge sparger

b. satisfy the hydrogen mixer starting circuit interlock.

c. provide adequate cooling and scrubbing of radioactive particles

d. allow drywell burping to remain an option for reducing drywell pressure.

QUESTION: 036 (1.00)

EOP-6, Primary Containment Control, Containment Temperature Branch, directs the operators to attempt to hold containment temperature less than 185°F. The reason for maintaining the temperature less than 185°F is to . . .

a. assure containment integrity is maintained.

b. ensure accurate suppression pool level indication.

c. maintain long-term operability of the scram pilot valve solenoids.

d. avoid false level indications on the SLC storage tank level meter.

QUESTION: 037 (1.00)

The plant was in Mode 4 at 185°F; RHR-B is in shutdown cooling. If a full, valid, low RPV level 1 signal occurred during surveillance testing and all equipment operated as designed, drywell temperature will ____(1)____ and drywell pressure will ____(2)____?

	(1)	(2)
a.	increase	decrease
b.	decrease	increase
c.	increase	increase
d.	decrease	decrease

QUESTION: 038 (1.00)

Given the following conditions:

- The turbine generator was in operation producing 700 MWe.
- APRM indications began to rise slowly with no change in reactor recirculation flow or rod motion.
- Feedwater temperature decreased 12°F.

In accordance with CPS 4005.01, Loss of Feedwater Heating, power should be reduced to:

a. 644 MWe

b. 604 MWe

c. 572 MWe

d. 532 MWe

QUESTION: 039 (1.00)

In accordance with EOP-1, RPV Control, you can determine that the reactor is shutdown by verifying . . .

a. control rod positions

b. APRMs downscale or below indicating range

c. reactor pressure decreasing

d. a negative reactor period

QUESTION: 040 (1.00)

Given the following conditions:

- The Control Room has been evacuated in accordance with CPS 4003.01, Remote Shutdown.
- The immediate actions for CPS 4003.01 have been completed.
- The remote shutdown panel (RSP) was placed in operation.
- The Division 1 & Division 2 SRV transfer switches were placed in Emergency.

Reactor pressure is controlled by varying RCIC flow and by . . .

a. manual operation of the SRVs

b. automatic operation of the SRVs (low-low set) after the first one opened.

c. manual operation of the Automatic Depressurization System.

d. adjusting the main steam bypass valve pressure setpoint

QUESTION: 041 (1.00)

During normal power operations, early indication of a cladding failure of the fuel would be indicated by increased readings on which Process Radiation Monitors (PRMs)?

a. Fuel Building Exhaust Vent Plenum

b. Standby Gas Treatment System Exhaust Stack

c. Containment Building Containment Continuous Purge Exhaust

d. Pre-treatment and Post-treatment Off Gas.

QUESTION: 042 (1.00)

Given that there has been a break in the Instrument Air (IA) system with a continuous decrease in IA system pressure, predict the response of the CRD system.

a. The SDV vent & drain valves open and the CRD flow control valve opens.

b. The scram inlet and outlet valves close and the CRD flow control valve closes.

c. The SDV vent and drain valves open and the scram inlet and outlet valves open.

d. The SDV vent and drain valves close and the scram inlet and outlet valves open.

QUESTION: 043 (1.00)

Given the following conditions:

- The plant is operating at 100% RTP.
- The "A" CRD pump has tripped.
- The "B" CRD pump has NOT been started.

Choose the statement that describes the effect the loss of CRD pumps has on the plant.

a. Multiple control rods will begin to drift if a pump is NOT returned to service within 15 minutes.

b. The control rods can still be scrammed, but the insertion time will be significantly increased.

c. Multiple control rod drive mechanism temperatures will begin to increase.

d. The control rods will NOT fully scram with reactor pressure alone due to pressure equalization across the drive piston.

QUESTION: 044 (1.00)

During refueling operations, the upper containment fuel pool racks must have a minimum water level above irradiated fuel seated in the rack. If the water level drops below this minimum value, there may be an insufficient volume of water to . . .

a. dump to the suppression pool, if required.

b. absorb decay heat if pool cooling is lost.

c. provide adequate shielding during fuel movement.

d. provide adequate net positive suction head for the fuel pool cooling system.

QUESTION: 045 (1.00)

The plant was operating at 100% RTP with the containment continuous purge (CCP) system in operation. If an event occurred that required entry into EOP-6, Primary Containment Control, with DRYWELL/CONTAINMENT PRESSURE being the driving leg, how would the CCP system respond to the event?

a. The CCP system would realign to exhaust through the drywell purge filter trains.

b. The CCP supply and exhaust valves would close/isolate.

c. The CCP supply damper would modulate open.

d. The second CCP exhaust fan would start.

QUESTION: 046 (1.00)

The Pressure Branch of EOP-1, RPV Control, allows the use of SRVs for pressure control if suppression pool level is above 8 feet. A suppression pool level of 8 feet corresponds to the minimum . . .

a. level for the suppression pool cooling mode of RHR.

b. indicated suppression pool water level.

c. level to cover the top row of horizontal vent holes in the weir wall.

d. NPSH\Vortex limits for ECCS\RCIC operation.

QUESTION: 047 (1.00)

Following a small break LOCA, indicated wide range RPV level is -20" and slowly increasing due to RCIC injection from the CST. Other plant parameters are as follows:

- Suppression pool level is 16.3 feet, slowly increasing
- Suppression pool temp is 140°F, slowly increasing
- Containment pressure is 1.8 psig, slowly increasing

Given the above plant conditions, WHICH ONE of the following identifies the MAXIMUM allowable reactor pressure?

a. 425 psig

b. 500 psig

c. 550 psig

d. 840 psig

QUESTION: 048 (1.00)

Given the following conditions:

- A LOCA has occurred .
- The reactor has been scrammed.
- Reactor pressure 200 psig
- Drywell temp. 310°F.
- Containment temp. 280°F.
- Narrow Range (NR) water level indication is 13 inches.
- Wide Range (WR) water level indication is -36 inches.
- Upset Range (UR) water level indication is 28 inches.

Based on the current plant conditions, which one of these indications can be used to determine RPV water level?

a. All three are valid.

b. NR and WR are valid, UR is invalid

c. UR and WR are valid, NR is invalid

d. NR and UR are valid, WR is invalid.

QUESTION: 049 (1.00)

EOP-6, Primary Containment Control, requires blowdown if suppression pool level CAN NOT be maintained within the safe region of the "SRV Tail Pipe Limit" curve. Which of the following will drive the plant toward the UNSAFE portion of the curve and an increased possibility of SRV tail pipe failure?

a. decreasing suppression pool water level, decreasing reactor pressure

b. decreasing suppression pool water level, increasing reactor pressure

c. increasing suppression pool water level, decreasing reactor pressure

d. increasing suppression pool water level, increasing reactor pressure

QUESTION: 050 (1.00)

Given the following conditions for the Suppression Pool Makeup System (SM)

	Div 1	Div 2
Mode Selector Switch:	Enable	Enable
Normal - Inop Handswitch:	Normal	Inop
Normal - Test Handswitch:	Normal	Test

Which one of the following describes the immediate response of the SM system to a High Drywell pressure signal under the given conditions?

a. Division 1 (only) Suppression Pool Dump Valves open.

b. Division 1 and 2 Suppression Pool Dump Valves open.

c. Permissive signal to open the Division 1 (only) Suppression Pool Dump Valves.

d. Permissive signal to open the Division 1 and 2 Suppression Pool Dump Valves.

QUESTION: 051 (1.00)

In an ATWS condition, reactor power DECREASES as RPV level is lowered because . . .

a. it reduces core flow causing increased void fraction.

b. moderator density inside and outside the core shroud equalizes, which equally distributes voiding throughout the core.

c. reducing RPV water level below the feedwater sparger decreases feedwater heating, which decreases moderator temperature, adding negative reactivity to the core.

d. reducing RPV water level below the steam dryer seal skirt equalizes pressure inside and outside of the core shroud, collapsing the voids.

QUESTION: 052 (1.00)

Which of the following describes why EOP-1, RPV Control, Level branch, directs the operators to WAIT until reactor water level drops to the top of active fuel prior to blowdown?

a. Waiting until TAF minimizes the thermal and mechanical stress on the SRVs.

b. Above TAF, blowdown will cause excessive RPV level swell.

c. Waiting until TAF provides additional time to restore RPV water level.

d. Below TAF, core cooling by submergence can no longer be ensured.

QUESTION: 053 (1.00)

The New Fuel Storage Vault Area Radiation Monitor (ARM), 1RIX-AR019, malfunctioned and a portable ARM was installed in the same general area as the 1RIX-AR019. During rounds, an Area Operator noticed that a BLUE rotating beacon was energized on the portable ARM. The BLUE rotating beacon indicates a/an . . .

a. detector failure

b. trend alarm

c. alert alarm

d. high alarm

QUESTION: 054 (1.00)

A valid Secondary Containment Ventilation Isolation signal, Fuel Building Exhaust High Radiation, was received. WHAT is the correct response for the systems listed below?

	Continuous Containment Purge (CCP)	Containment Building Ventilation (VR/VQ)	Standby Gas Treatment System (VQ)
a.	NOT Affected	NOT Affected	Auto Initiate
b.	Tripped/Isolated	Tripped/Isolated	NOT Affected
c.	NOT Affected	Tripped/Isolated	Auto Initiate
d.	Tripped/Isolated	NOT Affected	NOT Affected

QUESTION: 055 (1.00)

EOP-1A, ATWS RPV Control, directs operators to initiate Alternate Rod Insertion (ARI) using the ARI manual push buttons during an ATWS condition. The ARI push buttons provide an alternate means to . . .

a. de-energize the scram solenoid valves.

b. actuate the ATWS-RPT (trip the recirculation pump motor breakers).

c. vent the scram air header.

d. energize the the back-up scram solenoid valves.

QUESTION: 056 (1.00)

In EOP-9, "Radioactive Release Control," the operators are directed to restart Turbine Building Ventilation if it was shutdown. Restarting Turbine Building Ventilation will . . .

a. ensure Turbine Building air is filtered prior to release to the environment.

b. ensure Turbine Building air is monitored prior to release to the environment.

c. allow an alternate lineup for the Standby Gas Treatment System (VG) to take a suction from the Turbine Building.

d. allow an alternate lineup for the Turbine Building Ventilation system to take a suction from Secondary containment.

QUESTION: 057 (1.00)

Control rod 28-29 began drifting out following withdrawal during a rod sequence exchange. The rod was inserted and hydraulically isolated at its HCU following repeated insert attempts, to prevent it from drifting out. However, the rod continues to drift out. Based on the information provided above, the rod continues to drift out because . . .

a. the rod has a stuck collet assembly.

b. the rod has one blown scram pilot valve fuse.

c. CRD cooling water flow and pressure are too high.

d. the rod has a failed-open withdraw supply directional control valve.

QUESTION: 058 (1.00)

When NO rod is selected on the Rod Interface Display Module (RIDM) on P680, the LPRM string that is automatically selected is . . .

a. adjacent to the last selected rod

b. adjacent to the highest worth rod

c. the highest reading LPRM string

d. the LPRM string with the most detectors bypassed

QUESTION: 059 (1.00)

Recirculation loop flow mismatch shall be maintained within . . .

a. 5% of rated recirculation flow if core flow is less than 70% of rated core flow.

b. 5% of rated recirculation flow if core flow is greater than 70% of rated core flow.

c. 10% of rated recirculation flow if core flow is greater than 70% of rated core flow.

d. 15% of rated recirculation flow if core flow is less than 60% of rated core flow.

QUESTION: 060 (1.00)

Given the following conditions:

- The reactor was at 100% RTP.
- Turbine driven reactor feedwater pump "A" tripped.
- RPV level decreased to +25 inches.

Due to a recirculation flow control valve (FCV) malfunction, both FCVs stopped moving at 40% full open. Assuming no operator action, after the FCVS stop moving . . .

a. RPV level will recover to 36 inches.

b. RPV level will continue to decrease.

c. both recirculation pumps automatically trip off.

d. the plant will be in the Restricted Zone of the Power to Flow Map.

QUESTION: 061 (1.00)

Given the following conditions:

- A large recirculation pipe break occurred in the drywell.
- A loss of offsite power occurred at the same time.
- The EDGs responded correctly and connected to their respective buses.

Which of the following describes the response of the RHR pumps without any operator action?

a. Each pump starts immediately

b. Each pump starts after a 5 seconds delay

c. RHR A & B pumps start immediately, RHR C pump starts after a 5 second delay.

d. RHR C pump starts immediately, RHR A & B pumps start after a 5 second delay.

QUESTION: 062 (1.00)

The plant is at 100% RTP and the reactor water cleanup system (RWCU) is in service. If the operator inadvertently depressed the control switch for the RWCU Suction Outboard Isolation valve, G33-F004, when will the RWCU pumps trip? They will trip as soon as . . .

a. valve F004 leaves its fully open position.

b. valve F004 reaches its fully closed position.

c. system flow decreases to < 70 gpm.

d. the 5 second low flow time delay has timed out.

QUESTION: 063 (1.00)

Given the following conditions:

- The plant was operating in Mode 4 with a reactor coolant temperature of 180°F.
- The "A" loop of RHR was operating in Shutdown Cooling (SDC) from the Remote Shutdown Panel.
- RPV Level decreased to + 5 inches, Shutdown Range.

In order to assure adequate core coverage, the SDC Suction Isolation valves, F008 & F009 . . .

a. automatically close and the RHR-A pump automatically trips.

b. automatically close and the RHR-A pump must be manually tripped.

c. must be manually closed and the RHR-A pump automatically trips.

d. must be manually closed and the RHR-A pump must be manually tripped.

QUESTION: 064 (1.00)

Given the following conditions:

- The plant was operating at 60% RTP.
- A Low Pressure Core Spray System (LPCS) Full Flow Test was in progress.
- An event occurred and drywell pressure increased to 2.0 psig.

Following the event:

- RPV water level was at 50 inches (NR) and steady
- RPV pressure was 975 psig and steady.
- Drywell pressure was 2.3 psig and steady.

WHICH of the following describes the status of the Low Pressure Core Spray system?

a. The LPCS pump should have tripped.

b. LPCS remained in the Full Flow Test mode.

c. LPCS realigned and is injecting into the vessel.

d. LPCS realigned and is pumping water into the suppression pool via the min flow line.

QUESTION: 065 (1.00)

Given the following conditions:

- The High Pressure Core Spray (HPCS) system was running in RCIC Storage Tank to RCIC Storage Tank (tank-to- tank) mode.
- During the test, the RCIC storage tank level instruments failed low.

Assuming no operator action, which of the following describes the status of the high pressure core spray system?

a. The HPCS pump will trip because the suppression pool suction valve (F015) and the RCIC storage tank valve (F001) will both be open at the same time.

b. The HPCS 1st and 2nd test valves (F010 & F011) to storage tank both close as the suppression pool suction valve (F015) begins to open.

c. The HPCS pump will continue to operate in the tank-to- tank mode. Auto swap-over of the suction is prohibited when the MOV TEST PREP switch is in the TEST position.

d. The suppression pool suction isolation valve (F015) opens and the RCIC storage tank isolation valve (F001) shuts. HPCS pumps from the suppression pool to the RCIC storage tank until manually realigned to the suppression pool or the reactor.

QUESTION: 066 (1.00)

Besides an RWCU system isolation, what additional automatic action occurs when SLC "A" is initiated?

a. The mixing heater for the SLC storage tank de- energizes.

b. The SLC test tank outlet valve receives a close signal.

c. The white continuity lamp for the "B" squib valve goes out.

d. The SLC storage tank outlet valve "A" receives an open signal.

QUESTION: 067 (1.00)

Which of the following describes how the Backup Scram Valves scram the reactor?

The Backup Scram Valves . . .

a. provide an alternate flowpath from the HCU accumulator to the CRDM and from the CRDM to the SDV.

b. isolate and vent the air supply for each scram inlet and outlet valve on each individual HCU.

c. de-energize and reposition the scram pilot solenoid valves on the HCUs

d. isolate instrument air from the scram air header and vent the scram air header.

QUESTION: 068 (1.00)

Given the following conditions:

- A reactor startup is in progress.
- SRM A 110 counts/second
- SRM B 120 counts/second
- SRM C 105 counts/second
- SRM D 115 counts/second
- IRMs A and D Range 2
- All other IRMs Range 3
- The SRM detectors are being withdrawn.

As the SRMs are being withdrawn, SRM A output fails to zero (0) counts. Which of the following describes the results of SRM A output failing to zero counts?

	Rod Withdraw Block	RPS Trip Signal
a.	Y	N
b.	N	Y
c.	Y	Y
d.	N	N

QUESTION: 069 (1.00)

A small break LOCA inside the Drywell has caused a WIDE range RPV level instrument reference leg to reach saturation temperature. The indicated level for this instrument will . . .

a. NOT change if actual level remains constant.

b. trend down even though actual level remains constant.

c. trend up even though actual level remains constant.

d. NOT change if actual level begins to change.

QUESTION: 070 (1.00)

The Reactor Core Isolation Cooling (RCIC) system was operating for a full flow test when a RCIC Turbine trip occurred. Which one of the following describes the position indication in the Main Control Room for the RCIC Turbine Trip-Throttle Valve (TTV), C002, prior to resetting the turbine trip?

	Turbine Trip Valve Stem	Turbine Trip Valve Operator
a.	Open	Open
b.	Open	Closed
c.	Closed	Open
d.	Closed	Closed

QUESTION: 071 (1.00)

Given the following conditions:

- Division I 125 VDC was de-energized and is unavailable.
- All other equipment was available and in its normal lineup.
- An event occurred which required the manual initiation of ADS.

If the A & E ADS "arm and depress" pushbuttons are used, the ADS valves will ___(1)___. If the B & F ADS "arm and depress" pushbuttons are used, the ADS valves will ___(2)___.

	(1)	(2)
a.	Open	Open
b.	Open	NOT Open
c.	NOT Open	Open
d.	NOT Open	NOT Open

QUESTION: 072 (1.00)

Given the following conditions

- A reactor startup is in progress.
- Containment and drywell ventilation systems are operating normally.
- Drywell pressure is slowly increasing.

A decision is made to "Burp" the drywell in accordance with CPS 3316.01, Combustible Gas Control System. If containment pressure exceeds drywell pressure during this evolution, the pressures are equalized by . . .

a. the operation of the Drywell Vacuum Relief valves

b. backflow through the Drywell Purge Isolation valves

c. backflow through the Containment Exhaust Purge valves

d. the operation of Containment Building Supply Modulating Damper

QUESTION: 073 (1.00)

Given the following conditions:

At 10:00 a.m., the plant was operating normally at 100% RTP when a LOCA occurred. All systems operated as designed. Three and one-half (3.5) minutes later, the following conditions existed:

- RPV level was -150 inches decreasing.
- Drywell pressure was 1.96 psig increasing.
- Containment pressure was 7.9 psig increasing.

Assuming NO OPERATOR ACTION and NO change in the trends of the parameters provided above, the Containment Spray "B" Loop will actuate at approximately . . .

a. 10:06 a.m.

b. 10:08 a.m.

c. 10:10 a.m.

d. 10:12 a.m.

QUESTION: 074 (1.00)

Core load is in progress. You are in the process of relieving the "A" CRO. Refuel operations are on hold for control room shift change. During your review of the control room logs the reactor engineer provided you with the following:

- After loading 224 bundles - all SRM counts were approximately 31
- After loading 324 bundles - all SRM counts were approximately 62
- After loading 424 bundles - all SRM counts were approximately 125
- After loading 524 bundles - all SRM counts were approximately 250

The reactor engineer also stated that he had calculated shutdown margin after 524 bundles to be .35%. You should . . .

a. continue with core load, the SRM readings and shutdown margin are acceptable.

b. suspend all core alterations except for bundle removal.

c. evacuate the refuel floor of all non-radiation protection personnel.

d. place recirculation loop A & B flow controls in manual and reduce recirculation flow to minimum.

QUESTION: 075 (1.00)

Given the following conditions:

- A plant startup is in progress.
- The MSIVs are closed.
- Panel "A" of the non-divisional NSPS Solenoid (RPS) Power Distribution has been deenergized.

Based on the conditions provided above, from the main control room the inboard MSIVs . . .

a. can NOT be opened, the outboard MSIVs can be opened.

b. can be opened, the outboard MSIVs can NOT be opened.

c. and the outboard MSIVs can be opened.

d. and the outboard MSIVs can NOT be opened.

QUESTION: 076 (1.00)

Given the following plant conditions:

- The plant was operating at 85%.
- A malfunction occurred which resulted in a loss of Plant Service Water (WS) to the Turbine Building.

Assuming no operator action, the response of the Turbine Control Valve (TCV), the Bypass Valves (BPV), and reactor (Rx) pressure is:

a. TCVs remains as is, BPVs remain closed, Rx pressure decreases and stabilizes.

b. TCVs throttle closed, BPVs remain closed, Rx pressure increases and stabilizes.

c. TCVs remains as is, BPVs throttle to full open, Rx pressure decreases until the MSIVs close.

d. TCVs throttle closed, BPVs throttle to full open, Rx pressure increases until a scram occurs.

QUESTION: 077 (1.00)

Given the following conditions:

- The plant is operating at 100% RTP.
- The main turbine Main Shaft Oil Pump (MSOP) discharge pressure is slowly decreasing.
- All control switches are in AUTO.

As MSOP pressure slowly decreases from normal operating pressure, choose the order that the Main Turbine Lube Oil System pumps automatically start. (assume no operator actions)

a. Motor Suction Pump, Emergency Bearing Oil Pump, Turning Gear Oil Pump.

b. Turning Gear Oil Pump, Motor Suction Pump, Emergency Bearing Oil Pump.

c. Emergency Bearing Oil Pump, Turning Gear Oil Pump, Motor Suction Pump.

d. Turning Gear Oil Pump, Emergency Bearing Oil Pump, Motor Suction Pump.

QUESTION: 078 (1.00)

The plant was operating at 100% RTP when a transient occurred that resulted in the isolation of the MSRs and the 6B FW Heater. In accordance with Off Normal Procedure, CPS 4005.01, "Loss of Feedwater Heating," you IMMEDIATELY:

a. manually scram the reactor and enter procedure CPS 4100.01, Reactor Scram.

b. insert the CRAM ARRAYS until clear of the Restricted Zone on the Stability Control Map.

c. downshift recirculation pumps and take local control of MSR and feedwater heaters.

d. reduce power by reducing recirculation flow.

QUESTION: 079 (1.00)

The plant was operating at 100% when an inadvertent scram occurred during scram discharge volume water level testing. Setpoint setdown logic . . .

a. is directly initiated by the scram signal.

b. is directly initiated when RPV level goes below Level 3.

c. can be reset manually when the scram signal is reset.

d. resets automatically when RPV level goes above Level 3.

QUESTION: 080 (1.00)

Given the following conditions:

- The plant was operating at 100% RTP.
- A feedwater transient occurred that resulted in RPV water level lowering to -50 inches.
- The reactor scrammed and all systems responded as designed to the transient.
- Control of RPV level has been restored and level is currently -15 inches and increasing.

As part of the recovery actions, the CRVICS Inboard & Outboard Isolation Seal-in reset buttons were depressed. No other operator actions have been taken. Based on the conditions provided above, the SGTS-A . . .

a. will automatically restart if flow in the SGTS-B lowers to 3500 cfm.

b. will automatically restart if Drywell pressure increases to 1.68 psig.

c. must be shutdown manually.

d. will remain in standby.

QUESTION: 081 (1.00)

Given the following conditions:

- The plant is operating at 100% RTP.
- The 138Kv transmission line is out of service for trouble shooting.

Given the conditions above, AND a loss of voltage to Bus 1A1, the electrical power source to Bus 1A1 will automatically be transferred to the . . .

a. Unit Auxiliary Transformer (UAT).

b. Emergency Diesel Generator (EDG).

c. Reserve Auxiliary Transformer (RAT).

d. Emergency Reserve Auxiliary Transformer (ERAT).

QUESTION: 082 (1.00)

Given the following conditions for the 1A Uninterruptible Power Supply (UPS):

- The UPS 1A loads are being supplied from 480 VAC power.
- The Manual Bypass Switch is in the ALTERNATE SOURCE TO LOAD position.
- The Auto Retransfer Switch is in the OFF position.
- The inverter is operating at normal voltages.

If the Auto Retransfer Switch is taken to the ON position, the power supply for the UPS 1A loads . . .

a. will automatically transfer to the inverter through the Solid State Transfer Switch (Static Transfer Switch).

b. can be manually transferred to the inverter by depressing the INVERTER TO LOAD pushbutton.

c. will automatically transfer to the inverter when the Manual Bypass Switch is moved to the NORMAL TO LOAD position.

d. can be manually transferred to the inverter when the Manual Bypass Switch is moved to the TEST position.

QUESTION: 083 (1.00)

The Division 1 Emergency Diesel Generator (EDG) was started from the control room and is running in parallel with its associated bus for testing. If an aux operator depressed the local Emergency Stop pushbutton, the EDG would . . .

a. continue to run. The local Emergency Stop pushbutton is NOT in the control circuit unless the EDG was started locally.

b. continue to run. The local Emergency Stop pushbutton is NOT in the control circuit unless a LOCA or LOOP signal started the EDG.

c. immediately trip. The fuel racks are tripped and the air intake damper is shut.

d. immediately trip. The EDG exciter field and the DG lockout (86) relays will trip.

QUESTION: 084 (1.00)

The plant was in a refueling outage when the Refueling Platform Area Radiation Monitor (ARM) alarmed during movement of a fuel bundle. All systems and controls operated as designed. What was the impact of the ARM alarm on fuel handling operations?

a. Raise and lower power to the Refueling Platform hoist were interrupted and the Radiation Monitor Bypass Switch must be in Bypass to lower the fuel bundle.

b. Raise power to the Refueling Platform hoist was interrupted and the Radiation Monitor Bypass Switch must be in Bypass to raise the fuel bundle.

c. Lower power to the Refueling Platform hoist was interrupted and the Radiation Monitor Bypass Switch must be in Bypass to lower the fuel bundle.

d. Raise and lower power to the Refueling Platform hoist were interrupted and the Radiation Monitor Bypass Switch must be in Bypass to raise the fuel bundle.

QUESTION: 085 (1.00)

Which one of the following describes the response of the fire protection system to an inadvertent actuation of the deluge system for the main transformer?

a. The fire protection system header pressure will be adequately maintained by WS. No fire pumps will automatically start.

b. The "A" diesel fire pump will start immediately with the signal that initiated the deluge system. The "B" diesel fire pump will start if fire protection system pressure decreases below 140 psig.

c. The "A" diesel fire pump will start if fire protection system pressure decreases below 140 psig. If fire protection system pressure continues to decrease below 130 psig, the "B" diesel fire pump will start.

d. Fire protection system header pressure will decrease. The SX pumps will start and supply cooling to the SX system loads at 120 psig, allowing WS header pressure to recover fire protection system header pressure.

QUESTION: 086 (1.00)

A small instrument line leak has resulted in a main steam line tunnel temperature of 160°F. Which of the following have isolated?

a. Main steam lines only

b. Residual heat removal system and main steam lines

c. Reactor water cleanup system and main steam lines

d. Residual heat removal system, reactor water cleanup system, and main steam lines

QUESTION: 087 (1.00)

The plant has been operating normally at 83% RTP for several weeks. If the CC system were to develop an unisolable leak which exceeds the capacity of the CC expansion tank makeup, you should . . .

a. verify cooling water automatically transfers to the SX system.

b. stop the plant service air compressors within five minutes.

c. stop the FC system pumps within five minutes.

d. stop the RR pumps within one minute.

QUESTION: 088 (1.00)

Given the following conditions:

- The plant is in Mode 5 with fuel being moved from the RPV to the spent fuel pool using the Inclined Fuel Transfer System.
- The Division 1 Main Control Room HVAC subsystem is out of service for maintenance.
- The Division 2 Main Control Room HVAC subsystem is in service.

If a malfunction occurred and the Division 2 Main Control Room HVAC subsystem tripped, the TS required IMMEDIATE action is to . . .

a. start at least one train of Standby Gas.

b. stop irradiated fuel movement in the Spent Fuel Pool.

c. verify primary and secondary containment are established.

d. verify Control Building pressure is negative compared to the outside.

QUESTION: 089 (1.00)

The plant is nearing the end of a 6 day forced outage during which 5 control rod drives were replaced. Shutdown cooling has been secured and control rod time testing is about to be performed. The following plant conditions exist:

- Reactor Mode Switch position: REFUEL
- Reactor water temperature: 280°F
- Control rod position: All rods are full in
- Head Closure Bolts Fully tensioned

Based on the above conditions, the reactor would be in which one of the following Modes as defined by Technical Specifications? (Do NOT use special operations LCOs.)

a. Mode 2

b. Mode 3

c. Mode 4

d. Mode 5

QUESTION: 090 (1.00)

A manual throttle valve in the Division 1 Shutdown Service Water (SX) system is to be positioned closed three turns from full open for a surveillance test. The Shift Manager assigns you the job of accompanying the operator who will adjust the throttle valve, to assure that the valve is throttled as called for in the test procedure and to sign off the procedure step. Which of the following are you being ask to perform?

a. PEER CHECKING of the operator doing the valve manipulation.

b. DOUBLE VERIFICATION of the operator doing the valve manipulation.

c. INDEPENDENT VERIFICATION of the operator doing the valve manipulation.

d. SIMULTANEOUS VERIFICATION of the operator doing the valve manipulation.

QUESTION: 091 (1.00)

Given the following conditions:

- On May 4, 2000, a Procedure Deviation For Revision (PDR) for a HPCS surveillance was reviewed by the on- shift SM.
- The SM gave preliminary approval for the PDR and a PDR number was assigned. The corrected HPCS surveillance was completed later in the day.
- On May 21, 2000, you were assigned to perform the same HPCS surveillance.

Based on the conditions provided above, the PDR is . . .

a. Still effective once the PDR is verified to be current.

b. NOT effective because the PDR is more than 14 days old.

c. Still effective, but MUST be reviewed by the SM prior to use.

d. NOT effective because a PDR is a one-time use document.

QUESTION: 092 (1.00)

Given the following conditions:

- On May 7, 2000, a clearance section to perform maintenance on the RCIC system was signed on by an individual as a Clearance Section Holder in accordance with CPS 1014.01, Clearance and Tagging Manual.
- On May 18, the individual was called away from the site due to personal issues.
- On May 21, the maintenance on the RCIC system was completed, but the clearance section holder had NOT returned to the site.

Based on the information provided above, and in accordance with CPS 1014.01 . . .

a. if the clearance section holder can be reached by phone, his/her supervisor shall determine if the clearance section can be safely released, and shall sign off the clearance section with a note that the release was made by phone.

b. if the clearance section holder CANNOT be reached, his/her supervisor shall do a system walkdown to determine if the clearance section can be safely released, and, if so, shall sign off the clearance section.

c. if the clearance section holder can be reached by phone, the Work Coordination Supervisor (WCS) shall evaluate if the clearance section can be safely released, and if so, shall sign off the clearance section with a note that the release was made by the WCS.

d. If the clearance section holder CANNOT be reached, the Shift Manager (SM) shall perform a detailed review of the work performed, and sign off the clearance with a note that the release was made by the SM.

QUESTION: 093 (1.00)

As the "B" CRO, you discover an entry in the Narrative Log (NOMS) that was carried forward from a previous shift contains an error. Which one of the following is the method used to correct the entry?

a. You may annotate the original entry, stating the correction in your entry.

b. The entry CANNOT be changed once it is logged. It must be carried forward as-is.

c. You CANNOT correct the entry. Only the individual who made the entry can make corrections to the entry.

d. You must ask the on-watch control room supervisor to make the correction, the CRS is the only one authorized to make the correction.

QUESTION: 094 (1.00)

In accordance with CPS No. 3703.01, CORE ALTERATIONS, a fuel move is considered completed when the fuel bundle has been placed in it's designated location and:

a. the hoist loaded light goes out.

b. the grapple has been released.

c. the slack cable light is illuminated.

d. the orientation has been double verified.

QUESTION: 095 (1.00)

One of the entry conditions to EOP-8, Secondary Containment Control, is Differential Pressure at or above zero (0) inches of water. The differential pressure is being measured between the fuel building and the . . .

a. outside atmosphere.

b. auxiliary building

c. primary containment.

d. secondary containment.

QUESTION: 096 (1.00)

During an outage, the replacement of a reactor water cleanup valve will require 3 person-hours of work without a respirator, or 5 person-hours with a respirator. External dose rate for the area is 75 mRem/hr, and the airborne activity is 15 DAC. (2000 DAC-hrs represents 1 annual limit of intake and is equivalent to 5 Rem CEDE.)

Using TEDE ALARA principles, what is the LEAST dose a worker would receive performing this job?

a. 262.5 mRem

b. 337.5 mRem

c. 412.5 mRem

d. 562.5 mRem

QUESTION: 097 (1.00)

Given the following conditions:

- An accident has occurred on the refueling floor and an operator on the Refueling Platform was seriously injured. He is still on the Refueling Platform.
- Radiation levels in the area of the injured operator are 6700 mRem/hr.
- Emergency exposure limit for life saving operations has been authorized.

Calculate the maximum stay time for ONE individual with a lifetime accumulated dose of 4500 mRem, who renders life saving assistance to the injured operator.

a. 49 minutes

b. 1 hour 29 minutes

c. 3 hr, 3 minutes

d. 3 hr, 43 minutes

QUESTION: 098 (1.00)

The plant is at 100% RTP. The Field Supervisor, who was designated as the Fire Brigade Leader, had to leave the site due to illness. If a fire was identified in the Turbine Building prior to another individual being specifically designated as the Fire Brigade Leader, the individual who would assume the duties as the Fire Brigade Leader is the:

a. Shift Manager

b. Control Room Supervisor

c. Work Control Supervisor

d. Any fully certified "E" Area Operator

QUESTION: 099 (1.00)

Given the following conditions:

- An event has occurred and a Site Area Emergency has been declared.
- The TSC, OSC, and EOF have been activated and staffed.
- An electrical malfunction has rendered the TSC unusable and the Station Emergency Director has directed that the TSC be relocated.

The alternate location of the TSC is the:

a. Nuclear Support Annex

b. Nuclear Training Building (EOF)

c. Personnel Processing Building

d. Nuclear Program Support Building

QUESTION: 100 (1.00)

The plant was operating at 100% RTP. Fuel movement activities were being conducted in the spent fuel pool. A fuel bundle was inadvertently dropped while being moved. The bundle being moved and three additional bundles were damaged before the falling bundle settled on its side. Bubbles were seen by the operators on the refuel bridge, and shortly thereafter the VF exhaust radiation PRM (1RIX-PR006) was noted to be reading 11.2 mr/hr. The local ARM at the spent fuel pool was alarming. You should:

a. enter EOP-9, radioactivity release control.

b. enter EOP-1, RPV control and place the mode switch in SHUTDOWN.

c. verify that the fuel building ventilation system has isolated and standby gas has started.

d. closely monitor VF exhaust radiation levels. If they go above 12 mr/hr, then enter EOP-8, secondary containment control.

(********** END OF EXAMINATION **********)

ANSWER: 001 b.

REFERENCE:
Clinton EOP Technical Bases, EOP-6, Part D, pgs. 8-14 & 8-15
New
Level of Difficulty (1 - 5): 2
295013 2.4.18

ANSWER: 002 c.

REFERENCE:
LP85205, RHR, Student Handbook, pg. 21/47.
Modified
Level of Difficulty (1 - 5): 3
205000 2.1.32

ANSWER: 003 b.

REFERENCE:
Clinton EOP Technical Basis, EOP-8, "Secondary Containment Control," pg. 10-10.
Modified
Level of Difficulty (1 - 5): 3
295036K303

ANSWER: 004 b.

REFERENCE:
CPS 3304.01, Control Rod Hydraulic & Control, Section 8.3.4
Direct
Level of Difficulty (1 - 5): 3
201001A403

ANSWER: 005 c.

REFERENCE:
LP87401-02, Rod Control & Information System, Student Handbook, pgs. 31-41 to 32-41.
New
Level of Difficulty (1 - 5): 3
201005K602

ANSWER: 006 c.

REFERENCE:
LP87218, CPS 3101.01
Direct
Level of Difficulty (1 - 5): 2
203000K303

ANSWER: 007 b.

REFERENCE:
LP85209-03, Low Pressure Core Spray, Student Handbook, pg. 23/27.
Modified
Level of Difficulty (1 - 5): 2
209001K113

ANSWER: 008 b.

REFERENCE:
LP87401-02, RC&IS, Student Handbook, pgs. 10, 11,& 22 of 41; Figure 4.
CPS 3304.02, RC&IS, Sections 8.1.8.9; 8.1.8.10; & 8.2.6
New
Level of Difficulty (1 - 5): 2
214000K501

ANSWER: 009 b.

REFERENCE:
LP87409-01, Intermediate Range Monitors System (IRM), Student Handbook, pgs. 14 -18/27.
Direct
Level of Difficulty (1 - 5): 3
215003A104

ANSWER: 010 b.

REFERENCE:
LP87411, APRM System, Student Handbook, pg. 9/28.
Direct
Level of Difficulty (1 - 5): 2
215005A107

ANSWER: 011 b.

REFERENCE:
LP87218-01, Engineered Safety Systems Actuation System, Student Handbook, pg. 39.
Modified
Level of Difficulty (1 - 5): 4
218000A403

ANSWER: 012 a.

REFERENCE:
CPS 3312.01, Residual Heat Removal, Section 8.1.2.3
Modified
Level of Difficulty (1 - 5): 2
219000A108

ANSWER: 013 b.

REFERENCE:
CPS 3317.01
New
Level of Difficulty (1 - 5): 3
233000K102

ANSWER: 014 d.

REFERENCE:
LP85239, Main Steam System, Student Handbook, pg. 28.
New
Level of Difficulty (1 - 5): 2
239002K108

ANSWER: 015 d.

REFERENCE:
CPS No. 3101.01, MAIN STEAM (MS, IS & ADS),
Section 6.2,MSIV-LCS operational limits
New
Level of Difficulty (1 - 5): 3
239003A408

ANSWER: 016 b.

REFERENCE:
LP87241-01, Steam Bypass & Pressure Control System,
Student Handbook, pgs. 8 -13., & 36.
Modified
Level of Difficulty (1 - 5): 2
241000K308

ANSWER: 017 a.

REFERENCE:
LP85574-02, Switchgear Heat Removal System, Student
Handbook, pgs. 18/24, 19/24, & 22/24.
Modified
Level of Difficulty (1 - 5): 2
263000K501

ANSWER: 018 c.

REFERENCE:
CPS 4200.01, Loss of AC Power.
Modified
Level of Difficulty (1 - 5): 2
264000K301

ANSWER: 019 c.

REFERENCE:
LP 85271-02, Off Gas System, Student Handbook, pg.
30/34
Direct
Level of Difficulty (1 - 5): 2
271000A113

ANSWER: 020 a.

REFERENCE:
CPS 3402.01
New
Level of Difficulty (1 - 5): 2
290003K401

ANSWER: 021 b.

REFERENCE:
SD-SAIA & CPS 40001.01
CPS No. 3214.01
New
Level of Difficulty (1 - 5): 2
300000K102

ANSWER: 022 b.

REFERENCE:
LP 87406, Containment Monitoring, Student Handbook, pgs 6, 7, & 11 of 20.
New
Level of Difficulty (1 - 5): 3
50000K201

ANSWER: 023 b.

REFERENCE:
CPS 3215.01, Section 8.3.1
New
Level of Difficulty (1 - 5): 3
295002K201

ANSWER: 024 a.

REFERENCE:
LP87407-01, CRVICS, Student Hndbk, pgs. 22, 25, 53, 58, 59, 61, & 62.
New
Level of Difficulty (1 - 5): 2
223002K102

ANSWER: 025 a.

REFERENCE:
CPS 1401.04, Shift Turnover and Relief, Section 8.8.2 (pg. 9/18)
New
Level of Difficulty (1 - 5): 3
2.1.3

ANSWER: 026 c.

REFERENCE:
LP87212, Reactor Protection System, Student Handbook, Pg 22 of 32.
New
Level of Difficulty (1 - 5): 2
295005K101

ANSWER: 027 b.

REFERENCE:
LP 85233
Direct
Level of Difficulty (1 - 5): 3
233000K102

ANSWER: 028 d.

REFERENCE:
CPS4008.01, Abnormal Reactor Coolant Flow
New
Level of Difficulty (1 - 5): 2
295001 2.2.2

ANSWER: 029 a.

REFERENCE:
LP 85264, Diesel Generator, Student Handbook, pg. 66.
LP 85571, Auxiliary Power Systems, pgs. 11, 17, 37, & 45
Direct
Level of Difficulty (1 - 5): 2
295003A102

ANSWER: 030 b.

REFERENCE:
CPS 4201.01, Loss of DC Power, Section 4.4
New
Level of Difficulty (1 - 5): 3
295004K303

ANSWER: 031 a.

REFERENCE:
LP 85245, Main Turbine, Revision 1; LP 85249, Electro Hydraulic Control System, Revision 1.
Direct/slight mod
Level of Difficulty (1 - 5): 3
295006K204

ANSWER: 032 a.

REFERENCE:
LP 85205, Residual Heat Removal System, Revision 4
Direct
Level of Difficulty (1 - 5): 2
295007K205

ANSWER: 033 c.

REFERENCE:
LP 85217, RCIC, Student Handbook, pg. 63
LP 85259, Feedwater, Instructor Handbook, pg. 57 & Student Handbook, pg. 27
LP 85245, Main Turbine, Instructor Handbook, pgs. 47 & 48.
LP 85380, HPCS, Student Handbook, pg. 27
New
Level of Difficulty (1 - 5): 2
295008K101

ANSWER: 034 b.

REFERENCE:
LP85423, Nuclear Boiler Instrumentation, Student Handbook, Figure 6
New
Level of Difficulty (1 - 5): 2
295009K201

ANSWER: 035 c.

REFERENCE:
LP 85405, Combustible Gas Control System, pg. 8, 11, 12, & 32
EOP-6 Technical Bases, pg. 8-44
New
Level of Difficulty (1 - 5): 3
295010 2.4.20

ANSWER: 036 a.

REFERENCE:
EOP-6 Technical Bases, pg. 8-39
New
Level of Difficulty (1 - 5): 2
295011K301

ANSWER: 037 c.

REFERENCE:
LP 85222, Drywell Cooling System, Student Handbook, pg. 41
Modified
Level of Difficulty (1 - 5): 3
295012K101

ANSWER: 038 a.

REFERENCE:
CPS 4005.01, Loss of Feedwater Heating, Section 3.0 (Immediate Operator Actions)
New
Level of Difficulty (1 - 5): 4
295014A106

ANSWER: 039 a.

REFERENCE:
Clinton EOP Technical Bases, EOP-1, RPV CONTROL
New
Level of Difficulty (1 - 5): 2
295015A202

ANSWER: 040 a.

REFERENCE:
CPS 4003.01, Remote Shutdown, Section 4.3.d
Modified (EQB #16821; Clinton Exam Bank # 06245)
Level of Difficulty (1 - 5): 3
295016A108

ANSWER: 041 d.

REFERENCE:
LP 85273, Area & Process Radiation Monitoring, Student Handbook, pgs.47 & 72
Direct
Level of Difficulty (1 - 5): 3
295017K210

ANSWER: 042 d.

REFERENCE:
LP 85301, Service & Instrument Air, Student Handbook, pgs. 41 - 43.
New
Level of Difficulty (1 - 5): 2
295019A202

ANSWER: 043 c.

REFERENCE:
CPS 3304.01, Control Rod Hydraulic & Control, Section 8.3, Abnormal Operations
Direct
Level of Difficulty (1 - 5): 2
295022A203

ANSWER: 044 c.

REFERENCE:
LP85233-03, Fuel Pool Cooling and Cleanup System, Student Handbook
Modified
Level of Difficulty (1 - 5): 2
295023K101

ANSWER: 045 b.

REFERENCE:
LP 85455, Containment Ventilation and Drywell Purge System, Student Handbook, pgs 50-57.
New
Level of Difficulty (1 - 5): 3
295024A118

ANSWER: 046 b.

REFERENCE:
Clinton EOP Technical Bases, EOP-1, RPV CONTROL
New
Level of Difficulty (1 - 5): 3
295025A204

ANSWER: 047 d.

REFERENCE:
Clinton EOP 6, Primary Containment Control
New
Level of Difficulty (1 - 5): 3
295026K301

ANSWER: 048 b.

REFERENCE:
Clinton EOP Technical Bases, Variable & Curves Section, Detail A (pgs 12-17 to 12-19)
New
Level of Difficulty (1 - 5):3
295027K102

ANSWER: 049 d.

REFERENCE:
Clinton EOP Technical Bases, pg. 12-57
New
Level of Difficulty (1 - 5): 2
295029K301

ANSWER: 050 d.

REFERENCE:
LP 85408-01, Suppression Pool Makeup System, Student Handbook, pgs 13 - 17.
Direct
Level of Difficulty (1 - 5): 2
295030A104

ANSWER: 051 a.

REFERENCE:
Clinton EOP Technical Bases, EOP-1A, ATWS RPV CONTROL
Clinton EQB - QNUM 14341 (QDATE 1990/01/15)
Perry EQB - QNUM 20612
Modified
Level of Difficulty (1 - 5): 3
295031K103

ANSWER: 052 c.

REFERENCE:
Clinton EOP Technical Bases, EOP-1, Pgs 27 - 29
New
Level of Difficulty (1 - 5): 3
295031K305

ANSWER: 053 a.

REFERENCE:
LP85273-02, Area and Process Radiation Monitoring, Student Hndbk, Pgs 23-27 and 70-71.
Direct
Level of Difficulty (1 - 5): 2
295033A106

ANSWER: 054 a.

REFERENCE:
CPS No. 4001.02 C001
LP85261, Standby Gas Treatment System, Student Handbook, Summary
Direct
Level of Difficulty (1 - 5): 2
295034K203

ANSWER: 055 c.

REFERENCE:
LP 87212-01, Reactor Protection System, Student Handbook, Section 1.1.1, pg. 9 of 32
Section 2.1.2.2 & 2.1.4, pgs 12 & 13 of 32
Modified
Level of Difficulty (1 - 5): 3
295037K307

ANSWER: 056 b.

REFERENCE:
Clinton EOP Technical Basis, EOP-9, pg. 11-4
New
Level of Difficulty (1 - 5): 3
295038K102

ANSWER: 057 a.

REFERENCE:
CPS 3304.01, CONTROL ROD HYDRAULIC & CONTROL (RD), Section 8.3.5
Direct
Level of Difficulty (1 - 5): 3
201003K407

ANSWER: 058 a.

REFERENCE:
LP87401-02, Rod Control & Information System, Student Handbook,
pg. 11-41.
New
Level of Difficulty (1 - 5): 2
201005A301

ANSWER: 059 b.

REFERENCE:
TS 3.4.1
New
Level of Difficulty (1 - 5): 2
202001 2.1.33

ANSWER: 060 b.

REFERENCE:
LO 87402-01, RR Flow Control System, Student Handbook, pgs. 7/21 & 13/21.
New
Level of Difficulty (1 - 5): 3
202002A208

ANSWER: 061 d.

REFERENCE:
LP85205, Residual Heat Removal, Student Handbook, pg. 42 & 43 of 47.
Direct
Level of Difficulty (1 - 5): 3
203000A309

ANSWER: 062 a.

REFERENCE:
LP85204-07, Reactor Water Cleanup System, Student Handbook, pg. 12/31.
Modified (Clinton Exam Bank Q # 06566)
Level of Difficulty (1 - 5): 2
204000A210

ANSWER: 063 d.

REFERENCE:
LP85205-04, Residual Heat Removal, Student Handbook
CPS 4003.01008, RSP-Div 1 Shutdown Cooling Operation.
Modified
Level of Difficulty (1 - 5): 2
295021A203

ANSWER: 064 d.

REFERENCE:
LP 85209, Low Pressure Core Spray, Student Handbook, pgs. 13 - 16 of 27.
Direct (CLINTON 2/98 RO EXAM QUESTION # 22)
Level of Difficulty (1 - 5): 2
209001K408

ANSWER: 065 b.

REFERENCE:
LP85380-03, High Pressure Core Spray, Student Handbook, pgs. 17, 18, 23, & 26 of 29.
New
Level of Difficulty (1 - 5): 3
209002K602

ANSWER: 066 d.

REFERENCE:
LP85211-03, Standby Liquid Control System, Student Handbook, pgs. 18 & 19.
Modified
Level of Difficulty (1 - 5): 2
211000A109

ANSWER: 067 d.

REFERENCE:
LP 87212, Reactor Protection System, Student Handbook, pg. 15 of 32
Modified
Level of Difficulty (1 - 5): 2
212000K401

ANSWER: 068 a.

REFERENCE:
LP85212-02, Source Range Monitoring System, Student Handbook, pgs. 34 - 37 & 45.
Direct
Level of Difficulty (1 - 5): 3
215004K401

ANSWER: 069 c.

REFERENCE:
CPS 4411.07, RPV LEVEL INSTRUMENTATION
New (Grand Gulf EQB - QNUM 29839)
Level of Difficulty (1 - 5): 3
216000A207

ANSWER: 070 c.

REFERENCE:
LP85217-02, Reactor Core Isolation Cooling System, Student Handbook, pgs. 28 - 29/61.
Direct (Clinton Exam Bank Q # 06586)
Level of Difficulty (1 - 5): 2
217000 2.1.31

ANSWER: 071 c.

REFERENCE:
LP87218-01, Engineered Safety Systems Actuation System, Student Handbook, pg. 39
LP 85239, Main Steam System, Student Handbook, pgs. 25 & 55.
Direct
Level of Difficulty (1 - 5): 2
218000K201

ANSWER: 072 a.

REFERENCE:
LP85455-02, Containment Ventilation and Drywell Purge System, Student Hndbk, pgs.20 - 23.
LP85405-02, Combustible Gas Control System, Student Handbook, pg. 16
New
Level of Difficulty (1 - 5): 2
223001K501

ANSWER: 073 d.

REFERENCE:
LP85205-04, Residual Heat Removal System, Student Handbook, pg. 32/47.
Modified
Level of Difficulty (1 - 5): 4
226001A105

ANSWER: 074 b.

REFERENCE:
CPS Tech Specs 3.1.1, Shutdown Margin
New
Level of Difficulty (1 - 5): 3
234000A103

ANSWER: 075 c.

REFERENCE:
LP85239-04, Main Steam System, Student Handbook, pg 24/42.
Modified
Level of Difficulty (1 - 5): 2
239001K201

ANSWER: 076 d.

REFERENCE:
LP85253-02,Generator Stator Cooling System, Student Handbook, pgs. 23 - 25, 28 - 29.
Annunciator Response Procedure CPS 5200-3A, Generator Protection Circuit Energized.
Modified (Clinton Exam Bank Q # 07263)
Level of Difficulty (1 - 5): 4
241000K616

ANSWER: 077 d.

REFERENCE:
LP85247-02, Turbine Oil System, Student Handbook, pg. 34/48.
Annunciator Window 5017-6A, Auto Start Turb Auxiliary Pump/Motor.
New
Level of Difficulty (1 - 5): 3
245000K610

ANSWER: 078 d.

REFERENCE:
Off Normal Procedure, 4005.01, "Loss of Feedwater Heating," Revision 14, Section 3.0
Direct (Clinton SRO Exam 2/98, Q # 86)
Level of Difficulty (1 - 5): 3
259001A202

ANSWER: 079 b.

REFERENCE:
LP87570-01, Feedwater Control System, Student Handbook, pg. 49.
CPS 3103.01, Feedwater, Section 8.3.2
Modified
Level of Difficulty (1 - 5): 2
259002A306

ANSWER: 080 c.

REFERENCE:
CPS No. 3319.01, Standby Gas Treatment (VG), Section 8.1.3
Modified (Clinton Exam Bank Q # 21106)
Level of Difficulty (1 - 5): 3
261000K401

ANSWER: 081 b.

REFERENCE:
CPS 42001.01, Loss of AC Power, Section 2.1.
Modified
Level of Difficulty (1 - 5): 2
262001K602

ANSWER: 082 c.

REFERENCE:
LP85576-01, Uninterruptible Power Supply System, Student Handbook, pgs. 6/9 & 7/9.
Modified
Level of Difficulty (1 - 5): 4
262002A401

ANSWER: 083 d.

REFERENCE:
LP85264-02, Diesel Generator/Diesel Fuel Oil System, Student Handbook, pg. 73.
Modified
Level of Difficulty (1 - 5): 2
264000A404

ANSWER: 084 b.

REFERENCE:
LP86614-03, Fuel Handling Equipment, Student Handbook, pgs. 65/117 - 67/117,
Modified
Level of Difficulty (1 - 5): 3
272000A212

ANSWER: 085 c.

REFERENCE:
CPS 3213.01
New
Level of Difficulty (1 - 5): 3
286000A301

ANSWER: 086 c.

REFERENCE:
CPS No. 4001.02
New
Level of Difficulty (1 - 5): 2
290001A301

ANSWER: 087 d.

REFERENCE:
CPS No. 3203.01, 3302.01
New
Level of Difficulty (1 - 5): 2
400000K301

ANSWER: 088 b.

REFERENCE:
Technical Specification 3.7.4
Modified
Level of Difficulty (1 - 5): 2
2.1.11

ANSWER: 089 a.

REFERENCE:
Technical Specification 1.1, Definitions, Table 1.1-1
New
Level of Difficulty (1 - 5): 2
2.1.22

ANSWER: 090 d.

REFERENCE:
CPS1401.01, Operating Philosophy, Section 8.3.2.3.c
New
Level of Difficulty (1 - 5): 2
2.1.29

ANSWER: 091 a.

REFERENCE:
CPS 1005.07, CPS Procedures and Documents: Temporary Changes, Sections 2.2.5; 2.2.10; 8.2.1; and 8.4.10.
New
Level of Difficulty (1 - 5): 3
2.2.11

ANSWER: 092 c.

REFERENCE:
CPS 1014.01, Clearance and Tagging Manual, Section 8.6.4, Step 4
New
Level of Difficulty (1 - 5):2
VALIDATE AT THE SITE
2.2.13

ANSWER: 093 a.

REFERENCE:
LP87465-05, Conduct of Operations, Student Handbook, ph 12/33.
New (No longer used at the station - new procedure)
Level of Difficulty (1 - 5): 2
2.2.23

ANSWER: 094 b.

REFERENCE:
CPS 3703.01, Core Alterations, Section 2.2.2 (pg. 4/48).
Direct (Clinton Exam Bank Q # 08162)
Level of Difficulty (1 - 5): 2
2.2.28

ANSWER: 095 a.

REFERENCE:
Clinton EOP Technical Basis, EOP-8, pg. 10-4
Direct (Clinton Exam Bank Q # 06665)
Level of Difficulty (1 - 5): 3
295035A201

ANSWER: 096 b.

REFERENCE:
10 CFR 20.1204
New
Level of Difficulty (1 - 5): 3
2.3.2

ANSWER: 097 d.

REFERENCE:
EPIP RA-03, Radiological Exposure Guidelines, Section 4.2 (pg. 4/6).
Modified
Level of Difficulty (1 - 5): 2.2.3.4

ANSWER: 098 c.

REFERENCE:
CPS 1001.06, CPS Fire Brigade, Section 2.2.5 (pg. 4/15)
CPS 1893.00, Operational Fire Protection Program, Section 3.6 (pg. 5/10)
CPS 1401.05, Operator Logs & Records, Section 8.3.7 (Table 1) pg. 10/26
Modified
Level of Difficulty (1 - 5): 2
2.4.25

ANSWER: 099 b.

REFERENCE:
EPIP FE-01, TSC Operations, Section 4.6, pg 6/7.
Modified
Level of Difficulty (1 - 5): 2
2.4.29

ANSWER: 100 c.

REFERENCE:
EOP-8, Secondary Containment Control
New
LOD: 3
2.4.4

(********** END OF EXAMINATION **********)

ANSWER KEY

001 b	021 b	041 d	061 d	081 b
002 c	022 b	042 d	062 a	082 c
003 b	023 b	043 c	063 d	083 d
004 b	024 a	044 c	064 d	084 b
005 c	025 a	045 b	065 b	085 c
006 c	026 c	046 b	066 d	086 c
007 b	027 b	047 d	067 d	087 d
008 b	028 d	048 b	068 a	088 b
009 b	029 a	049 d	069 c	089 a
010 b	030 b	050 d	070 c	090 d
011 b	031 a	051 a	071 c	091 a
012 a	032 a	052 c	072 a	092 c
013 b	033 c	053 a	073 d	093 a
014 d	034 b	054 a	074 b	094 b
015 d	035 c	055 c	075 c	095 a
016 b	036 a	056 b	076 d	096 b
017 a	037 c	057 a	077 d	097 d
018 c	038 a	058 a	078 d	098 c
019 c	039 a	059 b	079 b	099 b
020 a	040 a	060 b & a	080 c	100 c

(********** END OF EXAMINATION **********)

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

Applicant Information

Name: MASTER	Region: III
Date: June 17,2000	Facility/Unit: CLINTON POWER STATION
License Level: SRO	Reactor Type: GE
Start Time: 0800	Finish Time: 1300

Instructions

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

Applicant Certification

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

_____
Applicant's Signature

Results

Examination Value	100.0	Points
Applicant's Score	_____	Points
Applicant's Grade	_____	Percent

ANSWER SHEET

If you change your answer, write your selection in the blank.

MULTIPLE CHOICE

001	a	b	c	d	___	024	a	b	c	d	___	023	a	b	c	d	___
002	a	b	c	d	___	025	a	b	c	d	___						
003	a	b	c	d	___	026	a	b	c	d	___						
004	a	b	c	d	___	027	a	b	c	d	___						
005	a	b	c	d	___	028	a	b	c	d	___						
006	a	b	c	d	___	029	a	b	c	d	___						
007	a	b	c	d	___	030	a	b	c	d	___						
008	a	b	c	d	___	031	a	b	c	d	___						
009	a	b	c	d	___	032	a	b	c	d	___						
010	a	b	c	d	___	033	a	b	c	d	___						
011	a	b	c	d	___	034	a	b	c	d	___						
012	a	b	c	d	___	035	a	b	c	d	___						
013	a	b	c	d	___	036	a	b	c	d	___						
014	a	b	c	d	___	037	a	b	c	d	___						
015	a	b	c	d	___	038	a	b	c	d	___						
016	a	b	c	d	___	039	a	b	c	d	___						
017	a	b	c	d	___	040	a	b	c	d	___						
018	a	b	c	d	___	041	a	b	c	d	___						
019	a	b	c	d	___	042	a	b	c	d	___						
020	a	b	c	d	___	043	a	b	c	d	___						
021	a	b	c	d	___	044	a	b	c	d	___						
022	a	b	c	d	___	045	a	b	c	d	___						

ANSWER SHEET

046 a b c d ___
047 a b c d ___
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086 a b c d ___
087 a b c d ___
088 a b c d ___
089 a b c d ___
090 a b c d ___

ANSWER SHEET

If you change your answer, write your selection in the blank.

091 a b c d ___

092 a b c d ___

093 a b c d ___

094 a b c d ___

095 a b c d ___

096 a b c d ___

097 a b c d ___

098 a b c d ___

099 a b c d ___

100 a b c d ___

(********** END OF EXAMINATION **********)
WRITTEN EXAMINATION GUIDELINES

1. After you complete the examination, sign the statement on the cover sheet indicating that the work is your own and you have not received or given assistance in completing the examination.

2. To pass the examination, you must achieve a grade of 80.00 percent or greater; grades will not be rounded up to achieve a passing score. Every question is worth one point.

3. The time limit for completing the examination is five hours.

4. You may bring pens, pencils, and calculators into the examination room. Use dark pencil or ink to mark your answers. If you need to erase, ensure you erase completely. Questions not gradable because of inadequate erasure will be marked as incorrect. If you are using ink and decide to change your original answer, draw a single line through the error, enter the desired answer in the line provided, and initial the change.

5. Print your name in the blank provided on the examination cover sheet and the answer sheet. You may be asked to provide the examiner with some form of positive identification.

6. Mark your answers on the answer sheet provided. You should not leave any question blank.

7. If you have any questions concerning the intent or the initial conditions of a question, do not hesitate asking them before answering the question. Ask questions of the NRC examiner or the designated facility instructor only. When answering a question, do not make assumptions regarding conditions that are not specified in the question unless they occur as a consequence of other conditions that are stated in the question. For example, you should not assume that any alarm has activated unless the question so states or the alarm is expected to activate as a result of the conditions that are stated in the question.

8. Restroom trips are permitted, but only one applicant at a time will be allowed to leave. Avoid all contact with anyone outside the examination room to eliminate even the appearance or possibility of cheating.

9. When you complete the examination, bring the cover sheet and your answer sheets to the NRC examiner or proctor. Remember to sign the statement on the examination cover sheet indicating that the work is your own and that you have neither given nor received assistance in completing the examination. Leave all other papers at your desk.

10. After you have turned in your examination, leave the examination area as defined by the proctor or NRC examiner. If you are found in this area while the examination is still in progress, your license may be denied or revoked.

11. Do you have any questions?

QUESTION: 001 (1.00)

Following a main generator load rejection from full Rated Thermal Power (RTP), a reactor scram is initiated to reduce reactor power in anticipation of a . . .

a. reactor water level increase.

b. reactor water level decrease.

c. reactor pressure increase.

d. reactor pressure decrease.

QUESTION: 002 (1.00)

The reactor is operating at 85% RTP when supplemental fuel pool cooling is required. Which one of the following systems can be used to supplement the heat removal capability of the fuel pool cooling and cleanup system?

a. Residual Heat Removal

b. Shutdown Service Water

c. Fire Protection

d. Reactor Water Cleanup

QUESTION: 003 (1.00)

Given the following conditions:

- Reactor power is 98% RTP and slowly decreasing
- RPV level (NR) 35 inches and stable
- "A" recirculation loop flow and FCV position are stable
- "B" recirculation loop flow and FCV position are slowly decreasing

Which of the following is the appropriate operator response?

a. Adjust the "A" FCV to match flow with the "B" recirculation loop.

b. Wait for the "B" recirculation loop flow to stabilize and then match loop flows.

c. Trip the "B" recirculation pump if the difference between loop flows exceeds 15%.

d. Inhibit the motion of the "B" FCV.

QUESTION: 004 (1.00)

The plant was at 100% RTP with a normal electrical lineup when a plant transient resulted in the following:

- The reactor scrammed.
- The main turbine tripped.
- The RAT tripped on a fault pressure lockout.
- Both TDRFPs tripped.
- RPV level is -60 inches and slowly increasing

Which of the following describes the condition of the Emergency Diesel Generators (EDG)?

a. Division 3 EDG running unloaded. Division 1 and 2 EDGs remain in standby status.

b. Division 3 EDG remains in standby status. Divisions 1 and 2 EDGs running unloaded.

c. All three EDGs running unloaded.

d. All three EDGs remain in standby status.

QUESTION: 005 (1.00)

Given the following conditions:

- The Unit was operating at 100% RTP.
- The "B" feedwater level instrument is the controlling instrument.
- The "A" and "C" circulating water pumps are operating.

If loss of 125 volt DC MCC 1F occurred, which of the following would be the cause of the reactor scram? (assume no operator actions.)

a. MSIV closure due to low instrument air header pressure.

b. high reactor vessel level due to loss of level instrument.

c. main turbine trip due to loss of main generator exciter field.

d. low vacuum due to loss of circulating water pumps.

QUESTION: 006 (1.00)

An abnormal condition has resulted in the following plant conditions:

- Reactor power is 45% RTP.
- Main turbine load is 23%.
- Turbine bypass valves are partially open.
- Total main steam flow is 45%.
- Annunciator "TCV Fast Close and MSV Trip Byp" is lit.

Under these abnormal conditions, if a main turbine trip were to occur then . . .

a. the reactor would scram on high reactor pressure.

b. a scram would occur immediately as soon the turbine control valves begin to close.

c. the turbine bypass valves would open to maintain steam header pressure, and operations would continue at the same power level.

d. the turbine bypass valves would open to control steam header pressure, but the recirc flow control valves would close, automatically reducing reactor power.

QUESTION: 007 (1.00)

The plant is in Mode 4 with the RHR-B loop operating in the Shutdown Cooling (SDC) Mode. If a transient occurred which resulted in an increase of reactor pressure to 110 psig, the expected plant response is that the SDC Inboard and Outboard Isolation Valves: (assume no operator actions.)

a. close and the RHR-B pump trips.

b. remain open and the RHR-B pump trips.

c. close and the RHR-B pump continues to operate.

d. remain open and the RHR-B pump continues to operate.

QUESTION: 008 (1.00)

Damage to equipment from excessive moisture carryover is prevented by:

a. MSIV closure at Level 8.

b. HPCS system shutdown at Level 8.

c. main turbine trip after RCIC initiation.

d. turbine feedwater pump trip after HPCS initiation.

QUESTION: 009 (1.00)

In EOP-1, RPV Control, the operating crew is asked if RPV level can be restored and maintained above -193 inches. A level of -193 inches corresponds to:

a. minimum core submergence RPV water level.

b. minimum steam cooling RPV water level.

c. instrument zero on the Fuel Zone level indication.

d. instrument zero on Wide Range level indication.

QUESTION: 010 (1.00)

EOP-6, Primary Containment Control, has been entered due to high drywell pressure. The Drywell/Containment Pressure branch prohibits using the hydrogen mixers if suppression pool level is below 13 ft., 1 in.

The pool level must be greater than or equal to 13 ft., 1 in. to:

a. provide adequate back pressure on the mixer discharge sparger

b. satisfy the hydrogen mixer starting circuit interlock.

c. provide adequate cooling and scrubbing of radioactive particles

d. allow drywell burping to remain an option for reducing drywell pressure.

QUESTION: 011 (1.00)

EOP-6, Primary Containment Control, Containment Temperature Branch, directs the operators to attempt to hold containment temperature less than 185°F. The reason for maintaining the temperature less than 185°F is to:

a. assure containment integrity is maintained.

b. ensure accurate suppression pool level indication.

c. maintain long-term operability of the scram pilot valve solenoids.

d. avoid false level indications on the SLC storage tank level meter.

QUESTION: 012 (1.00)

The plant was in Mode 4 at 185°F; RHR-B is in shutdown cooling. If a full, valid, low RPV level 1 signal occurred during surveillance testing and all equipment operated as designed, drywell temperature will _____(1)_____ and drywell pressure will _____(2)_____?

	(1)	(2)
a.	increase	decrease
b.	decrease	increase
c.	increase	increase
d.	decrease	decrease

QUESTION: 013 (1.00)

Given the following conditions:

- The turbine generator was in operation producing 700 MWe.
- APRM indications began to rise slowly with no change in reactor recirculation flow or rod motion.
- Feedwater temperature decreased 12°F.

In accordance with CPS 4005.01, Loss of Feedwater Heating, power should be reduced to:

a. 644 MWe

b. 604 MWe

c. 572 MWe

d. 532 MWe

QUESTION: 014 (1.00)

In accordance with EOP-1, RPV Control, you can determine that the reactor is shutdown by verifying:

a. control rod positions

b. APRMs downscale or below indicating range

c. reactor pressure decreasing

d. a negative reactor period

QUESTION: 015 (1.00)

Given the following conditions:

- The Control Room has been evacuated in accordance with CPS 4003.01, Remote Shutdown.
- The immediate actions for CPS 4003.01 have been completed.
- The remote shutdown panel (RSP) was placed in operation.
- The Division 1 & Division 2 SRV transfer switches were placed in Emergency.

Reactor pressure is controlled by varying RCIC flow and by:

a. manual operation of the SRVs

b. automatic operation of the SRVs (low-low set) after the first one opened.

c. manual operation of the Automatic Depressurization System.

d. adjusting the main steam bypass valve pressure setpoint

QUESTION: 016 (1.00)

During normal power operations, early indication of a cladding failure of the fuel would be indicated by increased readings on which Process Radiation Monitors (PRMs)?

a. Fuel Building Exhaust Vent Plenum

b. Standby Gas Treatment System Exhaust Stack

c. Containment Building Containment Continuous Purge Exhaust

d. Pre-treatment and Post-treatment Off Gas.

QUESTION: 017 (1.00)

Given that there has been a break in the Instrument Air (IA) system with a continuous decrease in IA system pressure, predict the response of the CRD system.

a. The SDV vent & drain valves open and the CRD flow control valve opens.

b. The scram inlet and outlet valves close and the CRD flow control valve closes.

c. The SDV vent and drain valves open and the scram inlet and outlet valves open.

d. The SDV vent and drain valves close and the scram inlet and outlet valves open.

QUESTION: 018 (1.00)

Given the following conditions:

- The plant is operating at 100% RTP.
- The "A" CRD pump has tripped.
- The "B" CRD pump has NOT been started.

Choose the statement that describes the effect the loss of CRD pumps has on the plant.

a. Multiple control rods will begin to drift if a pump is NOT returned to service within 15 minutes.

b. The control rods can still be scrammed, but the insertion time will be significantly increased.

c. Multiple control rod drive mechanism temperatures will begin to increase.

d. The control rods will NOT fully scram with reactor pressure alone due to pressure equalization across the drive piston.

QUESTION: 019 (1.00)

During refueling operations, the upper containment fuel pool racks must have a minimum water level above irradiated fuel seated in the rack. If the water level drops below this minimum value, there may be an insufficient volume of water to:

a. dump to the suppression pool, if required.

b. absorb decay heat if pool cooling is lost.

c. provide adequate shielding during fuel movement.

d. provide adequate net positive suction head for the fuel pool cooling system.

QUESTION: 020 (1.00)

The plant was operating at 100% RTP with the containment continuous purge (CCP) system in operation. If an event occurred that required entry into EOP-6, Primary Containment Control, with DRYWELL/CONTAINMENT PRESSURE being the driving leg, how would the CCP system respond to the event?

a. The CCP system would realign to exhaust through the drywell purge filter trains.

b. The CCP supply and exhaust valves would close/isolate.

c. The CCP supply damper would modulate open.

d. The second CCP exhaust fan would start.

QUESTION: 021 (1.00)

The Pressure Branch of EOP-1, RPV Control, allows the use of SRVs for pressure control if suppression pool level is above 8 feet. A suppression pool level of 8 feet corresponds to the minimum . . .

a. level for the suppression pool cooling mode of RHR.

b. indicated suppression pool water level.

c. level to cover the top row of horizontal vent holes in the weir wall.

d. NPSH\Vortex limits for ECCS\RCIC operation.

QUESTION: 022 (1.00)

Following a small break LOCA, indicated wide range RPV level is -20" and slowly increasing due to RCIC injection from the CST. Other plant parameters are as follows:

- Suppression pool level 16.3 feet, slowly increasing
- Suppression pool temp 140°F, slowly increasing
- Containment pressure 1.8 psig, slowly increasing

Given the above plant conditions, which one of the following identifies the MAXIMUM allowable reactor pressure?

a. 425 psig

b. 500 psig

c. 550 psig

d. 840 psig

QUESTION: 023 (1.00)

Given the following conditions:

- A LOCA has occurred .
- The reactor has been scrammed.
- Reactor pressure 200 psig
- Drywell temp. 310°F.
- Containment temp. 280°F.
- Narrow Range (NR) water level indication is 13 inches.
- Wide Range (WR) water level indication is -36 inches.
- Upset Range (UR) water level indication is 28 inches.

Based on the current plant conditions, which one of these indications can be used to determine RPV water level?

a. All three are valid.

b. NR and WR are valid, UR is invalid

c. UR and WR are valid, NR is invalid

d. NR and UR are valid, WR is invalid.

QUESTION: 024 (1.00)

EOP-6, Primary Containment Control, requires blowdown if suppression pool level CAN NOT be maintained within the safe region of the "SRV Tail Pipe Limit" curve. Which of the following will drive the plant toward the UNSAFE portion of the curve and an increased possibility of SRV tail pipe failure?

a. decreasing suppression pool water level, decreasing reactor pressure

b. decreasing suppression pool water level, increasing reactor pressure

c. increasing suppression pool water level, decreasing reactor pressure

d. increasing suppression pool water level, increasing reactor pressure

QUESTION: 025 (1.00)

Given the following conditions for the Suppression Pool Makeup System (SM)

	Div 1	Div 2
Mode Selector Switch:	Enable	Enable
Normal - Inop Handswitch:	Normal	Inop
Normal - Test Handswitch:	Normal	Test

Which one of the following describes the immediate response of the SM system to a High Drywell pressure signal under the given conditions?

a. Division 1 (only) Suppression Pool Dump Valves open.

b. Division 1 and 2 Suppression Pool Dump Valves open.

c. Permissive signal to open the Division 1 (only) Suppression Pool Dump Valves.

d. Permissive signal to open the Division 1 and 2 Suppression Pool Dump Valves.

QUESTION: 026 (1.00)

In an ATWS condition, reactor power DECREASES as RPV level is lowered because . . .

a. it reduces core flow causing increased void fraction.

b. moderator density inside and outside the core shroud equalizes, which equally distributes voiding throughout the core.

c. reducing RPV water level below the feedwater sparger decreases feedwater heating, which decreases moderator temperature, adding negative reactivity to the core.

d. reducing RPV water level below the steam dryer seal skirt equalizes pressure inside and outside of the core shroud, collapsing the voids.

QUESTION: 027 (1.00)

Which of the following describes why EOP-1, RPV Control, Level branch, directs the operators to WAIT until reactor water level drops to the top of active fuel prior to blowdown?

a. Waiting until TAF minimizes the thermal and mechanical stress on the SRVs.

b. Above TAF, blowdown will cause excessive RPV level swell.

c. Waiting until TAF provides additional time to restore RPV water level.

d. Below TAF, core cooling by submergence can no longer be ensured.

QUESTION: 028 (1.00)

The New Fuel Storage Vault Area Radiation Monitor (ARM), 1RIX-AR019, malfunctioned and a portable ARM was installed in the same general area as the 1RIX-AR019. During rounds, an Area Operator noticed that a BLUE rotating beacon was energized on the portable ARM. The BLUE rotating beacon indicates a/an:

a. detector failure

b. trend alarm

c. alert alarm

d. high alarm

QUESTION: 029 (1.00)

A valid Secondary Containment Ventilation Isolation signal, Fuel Building Exhaust High Radiation, was received. What is the correct response for the systems listed below?

	Continuous Containment Purge (CCP)	Containment Building Standby Gas Ventilation (VR/VQ)	Treatment System (VQ)
a.	NOT Affected	NOT Affected	Auto Initiate
b.	Tripped/Isolated	Tripped/Isolated	NOT Affected
c.	NOT Affected	Tripped/Isolated	Auto Initiate
d.	Tripped/Isolated	NOT Affected	NOT Affected

QUESTION: 030 (1.00)

EOP-1A, ATWS RPV Control, directs operators to initiate Alternate Rod Insertion (ARI) using the ARI manual push buttons during an ATWS condition. The ARI push buttons provide an alternate means to:

a. de-energize the scram solenoid valves.

b. actuate the ATWS-RPT (trip the recirculation pump motor breakers).

c. vent the scram air header.

d. energize the the back-up scram solenoid valves.

QUESTION: 031 (1.00)

In EOP-9, "Radioactive Release Control," the operators are directed to restart Turbine Building Ventilation if it was shutdown. Restarting Turbine Building Ventilation will:

a. ensure Turbine Building air is filtered prior to release to the environment.

b. ensure Turbine Building air is monitored prior to release to the environment.

c. allow an alternate lineup for the Standby Gas Treatment System (VG) to take a suction from the Turbine Building.

d. allow an alternate lineup for the Turbine Building Ventilation system to take a suction from Secondary containment.

QUESTION: 032 (1.00)

Control rod 28-29 began drifting out following withdrawal during a rod sequence exchange. The rod was inserted and hydraulically isolated at its HCU following repeated insert attempts, to prevent it from drifting out. However, the rod continues to drift out. Based on the information provided above, the rod continues to drift out because . . .

a. the rod has a stuck collet assembly.

b. the rod has one blown scram pilot valve fuse.

c. CRD cooling water flow and pressure are too high.

d. the rod has a failed-open withdraw supply directional control valve.

QUESTION: 033 (1.00)

When NO rod is selected on the Rod Interface Display Module (RIDM) on P680, the LPRM string that is automatically selected is . . .

a. adjacent to the last selected rod

b. adjacent to the highest worth rod

c. the highest reading LPRM string

d. the LPRM string with the most detectors bypassed

QUESTION: 034 (1.00)

Recirculation loop flow mismatch shall be maintained within:

a. 5% of rated recirculation flow if core flow is less than 70% of rated core flow.

b. 5% of rated recirculation flow if core flow is greater than 70% of rated core flow.

c. 10% of rated recirculation flow if core flow is greater than 70% of rated core flow.

d. 15% of rated recirculation flow if core flow is less than 60% of rated core flow.

QUESTION: 035 (1.00)

Given the following conditions:

- The reactor was at 100% RTP.
- Turbine driven reactor feedwater pump "A" tripped.
- RPV level decreased to +25 inches.

Due to a recirculation flow control valve (FCV) malfunction, both FCVs stopped moving at 40% full open. Assuming no operator action, after the FCVS stop moving . . .

a. RPV level will recover to 36 inches.

b. RPV level will continue to decrease.

c. both recirculation pumps automatically trip off.

d. the plant will be in the Restricted Zone of the Power to Flow Map.

QUESTION: 036 (1.00)

Given the following conditions:

- A large recirculation pipe break occurred in the drywell.
- A loss of offsite power occurred at the same time.
- The EDGs responded correctly and connected to their respective buses.

Which of the following describes the response of the RHR pumps without any operator action?

a. Each pump starts immediately

b. Each pump starts after a 5 seconds delay

c. RHR A & B pumps start immediately, RHR C pump starts after a 5 second delay.

d. RHR C pump starts immediately, RHR A & B pumps start after a 5 second delay.

QUESTION: 037 (1.00)

The plant is at 100% RTP and the reactor water cleanup system (RWCU) is in service. If the operator inadvertently depressed the control switch for the RWCU Suction Outboard Isolation valve, G33-F004, when will the RWCU pumps trip? They will trip as soon as:

a. valve F004 leaves its fully open position.

b. valve F004 reaches its fully closed position.

c. system flow decreases to < 70 gpm.

d. the 5 second low flow time delay has timed out.

QUESTION: 038 (1.00)

Given the following conditions:

- The plant was operating in Mode 4 with a reactor coolant temperature of 180°F.
- The "A" loop of RHR was operating in Shutdown Cooling (SDC) from the Remote Shutdown Panel.
- RPV Level decreased to + 5 inches, Shutdown Range.

In order to assure adequate core coverage, the SDC Suction Isolation valves, F008 & F009 . . .

a. automatically close and the RHR-A pump automatically trips.

b. automatically close and the RHR-A pump must be manually tripped.

c. must be manually closed and the RHR-A pump automatically trips.

d. must be manually closed and the RHR-A pump must be manually tripped.

QUESTION: 039 (1.00)

Given the following conditions:

- The plant was operating at 60% RTP.
- A Low Pressure Core Spray System (LPCS) Full Flow Test was in progress.
- An event occurred and drywell pressure increased to 2.0 psig.

Following the event:

- RPV water level was at 50 inches (NR) and steady
- RPV pressure was 975 psig and steady.
- Drywell pressure was 2.3 psig and steady.

Which of the following describes the status of the Low Pressure Core Spray system?

a. The LPCS pump should have tripped.

b. LPCS remained in the Full Flow Test mode.

c. LPCS realigned and is injecting into the vessel.

d. LPCS realigned and is pumping water into the suppression pool via the min flow line.

QUESTION: 040 (1.00)

Given the following conditions:

- The High Pressure Core Spray (HPCS) system was running in RCIC Storage Tank to RCIC Storage Tank (tank-to- tank) mode.
- During the test, the RCIC storage tank level instruments failed low.

Assuming no operator action, which of the following describes the status of the high pressure core spray system?

a. The HPCS pump will trip because the suppression pool suction valve (F015) and the RCIC storage tank valve (F001) will both be open at the same time.

b. The HPCS 1st and 2nd test valves (F010 & F011) to storage tank both close as the suppression pool suction valve (F015) begins to open.

c. The HPCS pump will continue to operate in the tank-to- tank mode. Auto swap-over of the suction is prohibited when the MOV TEST PREP switch is in the TEST position.

d. The suppression pool suction isolation valve (F015) opens and the RCIC storage tank isolation valve (F001) shuts. HPCS pumps from the suppression pool to the RCIC storage tank until manually realigned to the suppression pool or the reactor.

QUESTION: 041 (1.00)

Besides an RWCU system isolation, what additional automatic action occurs when SLC "A" is initiated?

a. The mixing heater for the SLC storage tank de- energizes.

b. The SLC test tank outlet valve receives a close signal.

c. The white continuity lamp for the "B" squib valve goes out.

d. The SLC storage tank outlet valve "A" receives an open signal.

QUESTION: 042 (1.00)

Which of the following describes how the Backup Scram Valves scram the reactor?

The Backup Scram Valves:

a. provide an alternate flowpath from the HCU accumulator to the CRDM and from the CRDM to the SDV.

b. isolate and vent the air supply for each scram inlet and outlet valve on each individual HCU.

c. de-energize and reposition the scram pilot solenoid valves on the HCUs

d. isolate instrument air from the scram air header and vent the scram air header.

QUESTION: 043 (1.00)

Given the following conditions:

- A reactor startup is in progress.
- SRM A 110 counts/second
- SRM B 120 counts/second
- SRM C 105 counts/second
- SRM D 115 counts/second
- IRMs A and D Range 2
- All other IRMs Range 3
- The SRM detectors are being withdrawn.

As the SRMs are being withdrawn, SRM A output fails to zero (0) counts. Which of the following describes the results of SRM A output failing to zero counts?

	Rod Withdraw Block	RPS Trip Signal
a.	Y	N
b.	N	Y
c.	Y	Y
d.	N	N

QUESTION: 044 (1.00)

A small break LOCA inside the Drywell has caused a WIDE range RPV level instrument reference leg to reach saturation temperature. The indicated level for this instrument will . . .

a. NOT change if actual level remains constant.

b. trend down even though actual level remains constant.

c. trend up even though actual level remains constant.

d. NOT change if actual level begins to change.

QUESTION: 045 (1.00)

The Reactor Core Isolation Cooling (RCIC) system was operating for a full flow test when a RCIC Turbine trip occurred. Which one of the following describes the position indication in the Main Control Room for the RCIC Turbine Trip-Throttle Valve (TTV), C002, prior to resetting the turbine trip?

	Turbine Trip Valve Stem	Turbine Trip Valve Operator
a.	Open	Open
b.	Open	Closed
c.	Closed	Open
d.	Closed	Closed

QUESTION: 046 (1.00)

Given the following conditions:

- Division I 125 VDC was de-energized and is unavailable.
- All other equipment was available and in its normal lineup.
- An event occurred which required the manual initiation of ADS.

If the A & E ADS "arm and depress" pushbuttons are used, the ADS valves will ____(1)____. If the B & F ADS "arm and depress" pushbuttons are used, the ADS valves will ____(2)____.

	(1)	(2)
a.	Open	Open
b.	Open	NOT Open
c.	NOT Open	Open
d.	NOT Open	NOT Open

QUESTION: 047 (1.00)

Given the following conditions

- A reactor startup is in progress.
- Containment and drywell ventilation systems are operating normally.
- Drywell pressure is slowly increasing.

A decision is made to "Burp" the drywell in accordance with CPS 3316.01, Combustible Gas Control System. If containment pressure exceeds drywell pressure during this evolution, the pressures are equalized by:

a. the operation of the Drywell Vacuum Relief valves

b. backflow through the Drywell Purge Isolation valves

c. backflow through the Containment Exhaust Purge valves

d. the operation of Containment Building Supply Modulating Damper,

QUESTION: 048 (1.00)

Given the following conditions:

At 10:00 a.m., the plant was operating normally at 100% RTP when a LOCA occurred. All systems operated as designed. Three and one-half (3.5) minutes later, the following conditions existed:

- RPV level was -150 inches decreasing.
- Drywell pressure was 1.96 psig increasing.
- Containment pressure was 7.9 psig increasing.

Assuming NO OPERATOR ACTION and NO change in the trends of the parameters provided above, the Containment Spray "B" Loop will actuate at approximately:

a. 10:06 a.m.

b. 10:08 a.m.

c. 10:10 a.m.

d. 10:12 a.m.

QUESTION: 049 (1.00)

Core load is in progress. You are in the process of relieving the "A" CRO. Refuel operations are on hold for control room shift change. During your review of the control room logs the reactor engineer provided you with the following:

- After loading 224 bundles - all SRM counts were approximately 31
- After loading 324 bundles - all SRM counts were approximately 62
- After loading 424 bundles - all SRM counts were approximately 125
- After loading 524 bundles - all SRM counts were approximately 250

The reactor engineer also stated that he had calculated shutdown margin after 524 bundles to be .35%. You should . . .

a. continue with core load, the SRM readings and shutdown margin are acceptable.

b. suspend all core alterations except for bundle removal.

c. evacuate the refuel floor of all non-radiation protection personnel.

d. place recirculation loop A & B flow controls in manual and reduce recirculation flow to minimum.

QUESTION: 050 (1.00)

Given the following conditions:

- A plant startup is in progress.
- The MSIVs are closed.
- Panel "A" of the non-divisional NSPS Solenoid (RPS) Power Distribution has been deenergized.

Based on the conditions provided above, from the main control room the inboard MSIVs . . .

a. can NOT be opened, the outboard MSIVs can be opened.

b. can be opened, the outboard MSIVs can NOT be opened.

c. and the outboard MSIVs can be opened.

d. and the outboard MSIVs can NOT be opened.

QUESTION: 051 (1.00)

Given the following plant conditions:

- The plant was operating at 85%.
- A malfunction occurred which resulted in a loss of Plant Service Water (WS) to the Turbine Building.

Assuming no operator action, the response of the Turbine Control Valve (TCV), the Bypass Valves (BPV), and reactor (Rx) pressure is:

a. TCVs remains as is, BPVs remain closed, Rx pressure decreases and stabilizes.

b. TCVs throttle closed, BPVs remain closed, Rx pressure increases and stabilizes.

c. TCVs remains as is, BPVs throttle to full open, Rx pressure decreases until the MSIVs close.

d. TCVs throttle closed, BPVs throttle to full open, Rx pressure increases until a scram occurs.

QUESTION: 052 (1.00)

Given the following conditions:

- The plant is operating at 100% RTP.
- The main turbine Main Shaft Oil Pump (MSOP) discharge pressure is slowly decreasing.
- All control switches are in AUTO.

As MSOP pressure slowly decreases from normal operating pressure, choose the order that the Main Turbine Lube Oil System pumps automatically start. (assume no operator actions)

a. Motor Suction Pump, Emergency Bearing Oil Pump, Turning Gear Oil Pump.

b. Turning Gear Oil Pump, Motor Suction Pump, Emergency Bearing Oil Pump.

c. Emergency Bearing Oil Pump, Turning Gear Oil Pump, Motor Suction Pump.

d. Turning Gear Oil Pump, Emergency Bearing Oil Pump, Motor Suction Pump.

QUESTION: 053 (1.00)

The plant was operating at 100% RTP when a transient occurred that resulted in the isolation of the MSRs and the 6B FW Heater. In accordance with Off Normal Procedure, CPS 4005.01, "Loss of Feedwater Heating," you IMMEDIATELY:

a. manually scram the reactor and enter procedure CPS 4100.01, Reactor Scram.

b. insert the CRAM ARRAYS until clear of the Restricted Zone on the Stability Control Map.

c. downshift recirculation pumps and take local control of MSR and feedwater heaters.

d. reduce power by reducing recirculation flow.

QUESTION: 054 (1.00)

The plant was operating at 100% when an inadvertent scram occurred during scram discharge volume water level testing. Setpoint setdown logic . . .

a. is directly initiated by the scram signal.

b. is directly initiated when RPV level goes below Level 3.

c. can be reset manually when the scram signal is reset.

d. resets automatically when RPV level goes above Level 3.

QUESTION: 055 (1.00)

Given the following conditions:

- The plant was operating at 100% RTP.
- A feedwater transient occurred that resulted in RPV water level lowering to -50 inches.
- The reactor scrammed and all systems responded as designed to the transient.
- Control of RPV level has been restored and level is currently -15 inches and increasing.

As part of the recovery actions, the CRVICS Inboard & Outboard Isolation Seal-in reset buttons were depressed. No other operator actions have been taken. Based on the conditions provided above, the SGTS-A . . .

a. will automatically restart if flow in the SGTS-B lowers to 3500 cfm.

b. will automatically restart if Drywell pressure increases to 1.68 psig.

c. must be shutdown manually.

d. will remain in standby.

QUESTION: 056 (1.00)

Given the following conditions:

- The plant is operating at 100% RTP.
- The 138Kv transmission line is out of service for trouble shooting.

Given the conditions above, AND a loss of voltage to Bus 1A1, the electrical power source to Bus 1A1 will automatically be transferred to the . . .

a. Unit Auxiliary Transformer (UAT).

b. Emergency Diesel Generator (EDG).

c. Reserve Auxiliary Transformer (RAT).

d. Emergency Reserve Auxiliary Transformer (ERAT).

QUESTION: 057 (1.00)

Given the following conditions for the 1A Uninterruptible Power Supply (UPS):

- The UPS 1A loads are being supplied from 480 VAC power.
- The Manual Bypass Switch is in the ALTERNATE SOURCE TO LOAD position.
- The Auto Retransfer Switch is in the OFF position.
- The inverter is operating at normal voltages.

If the Auto Retransfer Switch is taken to the ON position, the power supply for the UPS 1A loads . . .

a. will automatically transfer to the inverter through the Solid State Transfer Switch (Static Transfer Switch).

b. can be manually transferred to the inverter by depressing the INVERTER TO LOAD pushbutton.

c. will automatically transfer to the inverter when the Manual Bypass Switch is moved to the NORMAL TO LOAD position.

d. can be manually transferred to the inverter when the Manual Bypass Switch is moved to the TEST position.

QUESTION: 058 (1.00)

The Division 1 Emergency Diesel Generator (EDG) was started from the control room and is running in parallel with its associated bus for testing. If an aux operator depressed the local Emergency Stop pushbutton, the EDG would . . .

a. continue to run. The local Emergency Stop pushbutton is NOT in the control circuit unless the EDG was started locally.

b. continue to run. The local Emergency Stop pushbutton is NOT in the control circuit unless a LOCA or LOOP signal started the EDG.

c. immediately trip. The fuel racks are tripped and the air intake damper is shut.

d. immediately trip. The EDG exciter field and the DG lockout (86) relays will trip.

QUESTION: 059 (1.00)

The plant was in a refueling outage when the Refueling Platform Area Radiation Monitor (ARM) alarmed during movement of a fuel bundle. All systems and controls operated as designed. What was the impact of the ARM alarm on fuel handling operations?

a. Raise and lower power to the Refueling Platform hoist were interrupted and the Radiation Monitor Bypass Switch must be in Bypass to lower the fuel bundle.

b. Raise power to the Refueling Platform hoist was interrupted and the Radiation Monitor Bypass Switch must be in Bypass to raise the fuel bundle.

c. Lower power to the Refueling Platform hoist was interrupted and the Radiation Monitor Bypass Switch must be in Bypass to lower the fuel bundle.

d. Raise and lower power to the Refueling Platform hoist were interrupted and the Radiation Monitor Bypass Switch must be in Bypass to raise the fuel bundle.

QUESTION: 060 (1.00)

Which one of the following describes the response of the fire protection system to an inadvertent actuation of the deluge system for the main transformer?

a. The fire protection system header pressure will be adequately maintained by WS. No fire pumps will automatically start.

b. The "A" diesel fire pump will start immediately with the signal that initiated the deluge system. The "B" diesel fire pump will start if fire protection system pressure decreases below 140 psig.

c. The "A" diesel fire pump will start if fire protection system pressure decreases below 140 psig. If fire protection system pressure continues to decrease below 130 psig, the "B" diesel fire pump will start.

d. Fire protection system header pressure will decrease. The SX pumps will start and supply cooling to the SX system loads at 120 psig, allowing WS header pressure to recover fire protection system header pressure.

QUESTION: 061 (1.00)

A small instrument line leak has resulted in a main steam line tunnel temperature of 160°F. Which of the following have isolated?

a. Main steam lines only

b. Residual heat removal system and main steam lines

c. Reactor water cleanup system and main steam lines

d. Residual heat removal system, reactor water cleanup system, and main steam lines

QUESTION: 062 (1.00)

The plant has been operating normally at 83% RTP for several weeks. If the CC system were to develop an unisolable leak which exceeds the capacity of the CC expansion tank makeup, you should . . .

a. verify cooling water automatically transfers to the SX system.

b. stop the plant service air compressors within five minutes.

c. stop the FC system pumps within five minutes.

d. stop the RR pumps within one minute.

QUESTION: 063 (1.00)

Given the following conditions:

- The plant is in Mode 5 with fuel being moved from the RPV to the spent fuel pool using the Inclined Fuel Transfer System.
- The Division 1 Main Control Room HVAC subsystem is out of service for maintenance.
- The Division 2 Main Control Room HVAC subsystem is in service.

If a malfunction occurred and the Division 2 Main Control Room HVAC subsystem tripped, the TS required IMMEDIATE action is to . . .

a. start at least one train of Standby Gas.

b. stop irradiated fuel movement in the Spent Fuel Pool.

c. verify primary and secondary containment are established.

d. verify Control Building pressure is negative compared to the outside.

QUESTION: 064 (1.00)

The plant is nearing the end of a 6 day forced outage during which 5 control rod drives were replaced. Shutdown cooling has been secured and control rod time testing is about to be performed. The following plant conditions exist:

- Reactor Mode Switch position: REFUEL
- Reactor water temperature: 280°F
- Control rod position: All rods are full in
- Head Closure Bolts: Fully tensioned

Based on the above conditions, the reactor would be in which one of the following Modes as defined by Technical Specifications? (Do NOT use special operations LCOs.)

a. Mode 2

b. Mode 3

c. Mode 4

d. Mode 5

QUESTION: 065 (1.00)

A manual throttle valve in the Division 1 Shutdown Service Water (SX) system is to be positioned closed three turns from full open for a surveillance test. The Shift Manager assigns you the job of accompanying the operator who will adjust the throttle valve, to assure that the valve is throttled as called for in the test procedure and to sign off the procedure step. Which of the following are you being ask to perform?

a. PEER CHECKING of the operator doing the valve manipulation.

b. DOUBLE VERIFICATION of the operator doing the valve manipulation.

c. INDEPENDENT VERIFICATION of the operator doing the valve manipulation.

d. SIMULTANEOUS VERIFICATION of the operator doing the valve manipulation.

QUESTION: 066 (1.00)

Given the following conditions:

- On May 4, 2000, a Procedure Deviation For Revision (PDR) for a HPCS surveillance was reviewed by the on- shift SM.
- The SM gave preliminary approval for the PDR and a PDR number was assigned. The corrected HPCS surveillance was completed later in the day.
- On May 21, 2000, you were assigned to perform the same HPCS surveillance.

Based on the conditions provided above, the PDR is . . .

a. Still effective once the PDR is verified to be current.

b. NOT effective because the PDR is more than 14 days old.

c. Still effective, but MUST be reviewed by the SM prior to use.

d. NOT effective because a PDR is a one-time use document.

QUESTION: 067 (1.00)

Given the following conditions:

- On May 7, 2000, a clearance section to perform maintenance on the RCIC system was signed on by an individual as a Clearance Section Holder in accordance with CPS 1014.01, Clearance and Tagging Manual.
- On May 18, the individual was called away from the site due to personal issues.
- On May 21, the maintenance on the RCIC system was completed, but the clearance section holder had NOT returned to the site.

Based on the information provided above, and in accordance with CPS 1014.01 . . .

a. if the clearance section holder can be reached by phone, his/her supervisor shall determine if the clearance section can be safely released, and shall sign off the clearance section with a note that the release was made by phone.

b. if the clearance section holder CANNOT be reached, his/her supervisor shall do a system walkdown to determine if the clearance section can be safely released, and, if so, shall sign off the clearance section.

c. if the clearance section holder can be reached by phone, the Work Coordination Supervisor (WCS) shall evaluate if the clearance section can be safely released, and if so, shall sign off the clearance section with a note that the release was made by the WCS.

d. If the clearance section holder CANNOT be reached, the Shift Manager (SM) shall perform a detailed review of the work performed, and sign off the clearance with a note that the release was made by the SM.

QUESTION: 068 (1.00)

As the "B" CRO, you discover an entry in the Narrative Log (NOMS) that was carried forward from a previous shift contains an error. Which one of the following is the method used to correct the entry?

a. You may annotate the original entry, stating the correction in your entry.

b. The entry CANNOT be changed once it is logged. It must be carried forward as-is.

c. You CANNOT correct the entry. Only the individual who made the entry can make corrections to the entry.

d. You must ask the on-watch control room supervisor to make the correction, the CRS is the only one authorized to make the correction.

QUESTION: 069 (1.00)

In accordance with CPS No. 3703.01, CORE ALTERATIONS, a fuel move is considered completed when the fuel bundle has been placed in it's designated location and:

a. the hoist loaded light goes out.

b. the grapple has been released.

c. the slack cable light is illuminated.

d. the orientation has been double verified.

QUESTION: 070 (1.00)

One of the entry conditions to EOP-8, Secondary Containment Control, is Differential Pressure at or above zero (0) inches of water. The differential pressure is being measured between the fuel building and the . . .

a. outside atmosphere.

b. auxiliary building

c. primary containment.

d. secondary containment.

QUESTION: 071 (1.00)

During an outage, the replacement of a reactor water cleanup valve will require 3 person-hours of work without a respirator, or 5 person-hours with a respirator. External dose rate for the area is 75 mRem/hr, and the airborne activity is 15 DAC. (2000 DAC-hrs represents 1 annual limit of intake and is equivalent to 5 Rem CEDE.)

Using TEDE ALARA principles, what is the LEAST dose a worker would receive performing this job?

a. 262.5 mRem

b. 337.5 mRem

c. 412.5 mRem

d. 562.5 mRem

QUESTION: 072 (1.00)

Given the following conditions:

- An accident has occurred on the refueling floor and an operator on the Refueling Platform was seriously injured. He is still on the Refueling Platform.
- Radiation levels in the area of the injured operator are 6700 mRem/hr.
- Emergency exposure limit for life saving operations has been authorized.

Calculate the maximum stay time for ONE individual with a lifetime accumulated dose of 4500 mRem, who renders life saving assistance to the injured operator.

a. 49 minutes

b. 1 hour 29 minutes

c. 3 hr, 3 minutes

d. 3 hr, 43 minutes

QUESTION: 073 (1.00)

The plant is at 100% RTP. The Field Supervisor, who was designated as the Fire Brigade Leader, had to leave the site due to illness. If a fire was identified in the Turbine Building prior to another individual being specifically designated as the Fire Brigade Leader, the individual who would assume the duties as the Fire Brigade Leader is the:

a. Shift Manager

b. Control Room Supervisor

c. Work Control Supervisor

d. Any fully certified "E" Area Operator

QUESTION: 074 (1.00)

Given the following conditions:

- An event has occurred and a Site Area Emergency has been declared.
- The TSC, OSC, and EOF have been activated and staffed.
- An electrical malfunction has rendered the TSC unusable and the Station Emergency Director has directed that the TSC be relocated.

The alternate location of the TSC is the:

a. Nuclear Support Annex

b. Nuclear Training Building (EOF)

c. Personnel Processing Building

d. Nuclear Program Support Building

QUESTION: 075 (1.00)

The plant was operating at 100% RTP. Fuel movement activities were being conducted in the spent fuel pool. A fuel bundle was inadvertently dropped while being moved. The bundle being moved and three additional bundles were damaged before the falling bundle settled on its side. Bubbles were seen by the operators on the refuel bridge, and shortly thereafter the VF exhaust radiation PRM (1RIX-PR006) was noted to be reading 11.2 mr/hr. The local ARM at the spent fuel pool was alarming. You should:

a. enter EOP-9, radioactivity release control.

b. enter EOP-1, RPV control and place the mode switch in SHUTDOWN.

c. verify that the fuel building ventilation system has isolated and standby gas has started.

d. closely monitor VF exhaust radiation levels. If they go above 12 mr/hr, then enter EOP-8, secondary containment control.

QUESTION: 076 (1.00)

The plant was at 100% RTP when an event occurred which has caused a sustained loss of the non-vital buses. The mode switch was taken to SHUTDOWN. Under these conditions how is shutdown criteria verified?

a. Obtain an OD-7, Option 2 or 4.

b. At either RACSs panel, verify the all rods "full in" LED light is ON.

c. The shift manager determines that the shutdown criteria has been met.

d. Depress the "all rods" pushbutton at the P-680 panel. Verify all rods are 02 or less.

QUESTION: 077 (1.00)

A Station Blackout has occurred. In accordance with CPS 4200.01, Loss of AC Power, if Station Blackout is prolonged greater than one hour, then DC loads are to be reduced. Why?

a. To ensure a 4 hour DC supply to maintain manual SRV control.

b. To provide sufficient DC load capacity to allow for 8 hour operability of the LPCI system.

c. To provide prolonged operability of RHR B and C control power and Diesel Generator 1B control.

d. To provide continued RCIC control power up to 8 hours after the total loss of AC.

QUESTION: 078 (1.00)

Reactor power was reduced from 100% to 78% RTP to adjust the control rod pattern. During the rod pattern adjustment the next rod motion required rod XX-XX to be moved from position 38 to position 40. The reactor operator inadvertently depressed the insert pushbutton and inserted rod XX-XX to position 36. The rod is now at the same core depth as two adjacent control rods. You should direct the operator to IMMEDIATELY:

a. insert the rod to position 32.

b. reduce reactor power 50 MWe by recirc flow control, then return the rod to notch 38 and notify reactor engineering.

c. return the rod to notch 38; then, after documenting the mis-positioned control rod, continue with the rod pattern adjustment.

d. reduce reactor power by cram array insertion, then notify reactor engineering, return the rod to notch 38 when directed by reactor engineering, document the mis- positioned control rod.

QUESTION: 079 (1.00)

A Safety Relief Valve (SRV) tailpipe vacuum breaker has failed in the open position during SRV operation. Which of the following will result?

a. Direct pressurization of the containment each time the SRV is opened.

b. Steam bypassing the T-quenchers with a direct discharge path into the suppression pool water.

c. Suppression pool water being drawn up into the SRV tailpipe line after the SRV is closed.

d. Direct pressurization of the drywell each time the SRV is opened.

QUESTION: 080 (1.00)

The plant is at 100% RTP with one loop of RHR in service in the Suppression Pool cooling mode for routine cooldown. If an SRV inadvertently opened and the other loop of RHR was immediately started in Suppression Pool cooling, which of the following will result if the SRV CAN NOT be reclosed?

a. Heat-up of the suppression pool. Two heat exchangers are less than the heat rate of an open SRV.

b. Continued cooldown of the suppression pool. Each heat exchanger is sized to equal the heat rate of one open SRV.

c. Continued cooldown of the suppression pool with both loops in operation, but at a reduced rate due to the open SRV. Two heat exchangers slightly exceed the heat rate of one SRV.

d. Heat up of the suppression pool, but when the second loop of suppression pool cooling is put in service, the heat-up will stop. Two heat exchangers equal the heat rate of one SRV.

QUESTION: 081 (1.00)

The Main Control Room has been evacuated and control is now at the Remote Shutdown Panel. The Main Steam Isolation Valves (MSIVs) closed and pressure control is by manual operation of the Safety Relief Valves (SRVs). It is now 50 minutes since the reactor scrammed and the control room was evacuated. IDENTIFY the condition REQUIRING SRV closure.

a. Suppression pool temperature is 120°F.

b. Suppression pool water level is 19.5 feet.

c. Instrument air header pressure to the drywell is 70 psig.

d. RPV pressure is less than 415 psig.

QUESTION: 082 (1.00)

The station was operating at 90% RTP. The following conditions were noted by the reactor operator:

- CC temperature increasing slowly
- CC Expansion Tank level increasing slowly
- No other alarms or abnormal indications present.

Which one of the following malfunctions would cause these indications ?

a. CC heat exchanger tube leak(s).

b. RWCU non-regenerative heat exchanger tube leak.

c. CC heat exchanger temperature element failed high.

d. Loss of instrument air to the CC Expansion Tank makeup valve.

QUESTION: 083 (1.00)

A reactor heat up is in progress with reactor pressure at 700 psig. A surveillance to test the stroke close times of the Main Steam Isolation Valves has just been completed with the following results:

Inboard	Outboard
F022A 3.1 seconds	F028A 2.8 seconds
F022B 4.2 seconds	F028B 4.9 seconds
F022C 3.5 seconds	F028C 2.9 seconds
F022D 2.7 seconds	F028D 3.9 seconds

Which one of the following is the appropriate operator response?

a. Continue reactor heatup, closing times are within allowable closure times.

b. Shut the "B" main steam line isolation valves within 1 hour.

c. Shut the "A," "C," and "D" main steam line isolation valves within 8 hours.

d. Be in at least HOT SHUTDOWN within 12 hours and COLD SHUTDOWN within the following 24 hours.

QUESTION: 084 (1.00)

CPS No. 3312.03, "RHR - SHUTDOWN COOLING (SDC) & FUEL POOL COOLING AND ASSIST (FPC&A)" has a caution that states that anytime reactor recirculation is secured with the steam separator in place, RPV water level should be maintained above +44" - Shutdown Range OR +61" - Upset Range. The purpose of this caution is to:

a. minimize radiation levels on the refuel floor.

b. ensure sufficient water to cause natural circulation.

c. ensure residual heat from the steam separator is removed.

d. ensure minimum net positive suction head on the residual heat removal pump providing shutdown cooling.

QUESTION: 085 (1.00)

SELECT the condition in which primary containment integrity considerations take precedence over adequate core cooling.

a. Drywell temperature CANNOT be maintained below 330°F.

b. Containment temperature CANNOT be maintained below 185°F.

c. Suppression pool temperature CANNOT be maintained below Heat Capacity Limit.

d. Drywell/Containment pressure CANNOT be maintained below Primary Containment Pressure Limit.

QUESTION: 086 (1.00)

Which one of the following is of concern when a low Secondary Containment Differential Pressure exists?

a. There is a high heat load somewhere in the secondary containment that may damage the structure.

b. There could be an unmonitored ground level release of radioactivity.

c. Instrumentation inside the secondary containment is NOT EQ certified to operate correctly after the 10 psid alarm setpoint is exceeded.

d. If the differential pressure is allowed to continue to increase, it will pose a direct threat to operability of equipment that is important to safety within the secondary containment.

QUESTION: 087 (1.00)

A High Containment Hydrogen concentration of 6 percent was observed. What is(are) the expected operator actions for this event with respect to the Combustible Gas Control System?

a. Stop the hydrogen recombiners.

b. Startup the hydrogen igniters to control-burn the hydrogen to less than 4 percent concentration.

c. Manually control the hydrogen recombiners to process 70 scfm to lower the hydrogen concentration.

d. Stop the hydrogen igniters and reduce the hydrogen concentration using the hydrogen recombiners and compressors until hydrogen concentration is less than 4 percent and then restart the igniters.

QUESTION: 088 (1.00)

A control rod is at position 48. Testing of the control rod revealed a scram time of 7.5 seconds from position 48 to position 13. The control rod can still be positioned by normal control rod drive pressure. The reactivity margin is adequate for all positions of the control rod. Which one of the following states the status of this control rod?

a. It is operable.

b. It is inoperable but may remain electrically armed at position 48.

c. It is inoperable and must be electrically disarmed at position 00.

d. It is inoperable but may remain electrically armed if driven into position 00.

QUESTION: 089 (1.00)

A plant startup is being conducted. Power is at 17%. A C&I technician has just reported to you that he has completed calibrating the low power setpoint analog trip modules. The setpoints are all 17%. He also reports it has been 91 days since the last time the modules were calibrated. You should . . .

a. continue the startup, no restrictions exist.

b. enter T.S. 3.0.3 and commence a plant shutdown.

c. inform the "A" CRO that he is to suspend control rod withdrawal.

d. inform the "A" CRO that he is only allowed to move control rods by scram.

QUESTION: 090 (1.00)

Which of the following conditions would NOT allow an OPERATIONAL CONDITION MODE CHANGE from Condition 4 to Condition 2?

a. One INOPERABLE control rod that is immovable because of excessive friction.

b. Two OPERABLE adjacent control rods that are determined to be SLOW during SCRAM time testing.

c. Three INOPERABLE control rods that have accumulators that CANNOT be charged.

d. Four INOPERABLE control rods that are NOT in compliance with the banked position withdrawal sequence.

QUESTION: 091 (1.00)

Three hours ago APRM "C" was declared inoperable and all required tech spec actions associated with declaring APRM "C" inoperable were entered, but no actions have been taken. Repairs are expected to be completed within the next 12 hours. C & I has now informed you that they just discovered that while performing a reactor protection system surveillance four hours ago on APRM "A," the APRM "A" neutron flux-high trip response time did not meet the surveillance acceptance criteria. Which one of the following actions is required to be taken?

a. Manually scram the reactor by placing the mode switch in SHUTDOWN.

b. Commence an orderly shutdown and be in at least STARTUP/HOT STANDBY in the next 8 hours.

c. Place one APRM channel in trip in the next 2 hours, make repairs to either APRM channel, then repair the other channel.

d. Place one APRM channel in trip in the next 3 hours, make repairs to either APRM channel, then repair the other channel.

QUESTION: 092 (1.00)

CPS No. 3312.03, RHR - Shutdown Cooling (SDC) & Fuel Pool and Assist (FPC&A) has a caution that states, "If RHR Loop A and LPCS are operated at the same time, do NOT operate with RHR Loop A in minimum flow and LPCS in full flow test." What is the basis for this caution?

a. The discharge pressure on RHR loop A will increase and lift the RHR-A discharge safety relief valve.

b. RHR loop A flow will decrease to a value that is less than the minimum required flow for the RHR-A pump.

c. LPCS system flow will increase until suction pressure decreases enough to cause LPCS pump cavitation.

d. LPCS system flow instrumentation will give an erroneous reading that invalidates any surveillance testing under these system conditions.

QUESTION: 093 (1.00)

The Refuel platform is over the core and the HOIST LOADED indicator is NOT on, the Mode Switch is in Refuel and one control rod is selected and partially withdrawn. Which one of the following conditions will prevent reverse motion of the Refuel platform?

a. Selecting a different Control Rod.

b. Loading the auxiliary platform hoist.

c. Placing the Mode Switch in STARTUP.

d. Refuel floor HI-HI Radiation trip.

QUESTION: 094 (1.00)

A failure to scram has occurred. The following conditions exist:

- ADS has been inhibited
- SLC pump A is operating.
- Seven SRVs are operable and are being manually cycled for pressure control.
- Feed pumps and RCIC are maintaining RPV level.
- Suppression pool level is 15 feet.

Blowdown is required due to high Suppression pool temperature. What action must be taken by the crew prior to blowdown?

a. ADS must be un-inhibited.

b. Suppression pool level must be raised to 23 feet.

c. Feedwater injection must be terminated.

d. All injection (RCIC, Feed, & SLC) must be terminated.

QUESTION: 095 (1.00)

Select the one condition that describes when HOURLY FIRE WATCH(ES) Patrol must be established.

a. The "A" Diesel Driven Fire Pump is inoperable.

b. Welding/hot work is going on inside the weld shop area.

c. The smoke detection string for the DIV 3 Diesel Generator Room is inoperable.

d. Safe Shutdown Pathway Emergency Lighting Functional Test, CPS No. 3822.16, is past its due date, but is still within its late date.

QUESTION: 096 (1.00)

As the shift manager, you are prepared to conduct a shift turnover. In addition to the normally assigned shift operators, the plant manager, two AmerGen management visitors, the station's electrical maintenance manager, an electrician and a peer evaluator from WNP-2 are present for the shift turnover. According to the CPS administrative procedures, which one of the following is allowed to conduct the shift turnover?

a. allow the shift turnover to continue, the number of additional personnel is NOT excessive.

b. ask the WNP-2 peer evaluator to leave the room, then allow the shift turnover to continue.

c. ask the electrical maintenance manager and the electrician to leave the room, then allow the shift turnover to continue.

d. ask all the non-operations personnel to leave and have a separate briefing for them after the operator shift turnover is complete.

QUESTION: 097 (1.00)

You are the shift manager preparing for an evolution that is infrequently performed and has numerous cautions and precautions. You have determined that a Heightened Level of Awareness Pre-Job brief is necessary. (1) Who is responsible to ensure management's expectations concerning the cautions and precautions are met and, (2) who should conduct the brief to explain the cautions and precautions?

	(1) Who is Responsible?	(2) Who Conducts?
a.	Senior Management Rep	Control Room Supervisor
b.	Plant Manager	Person most knowledgeable about the evolution
c.	Assistant Plant Mgr	Shift Manager
d.	Shift Manager	Person most knowledgeable about the evolution

QUESTION: 098 (1.00)

Which one of the following changes can be done with a temporary procedure deviation (TPD)? The TPD . . .

a. does NOT alter intent of procedure

b. is to an EOP Flowchart (440X.01 series).

c. incorporates a temporary modification.

d. will be in effect for 92 days.

QUESTION: 099 (1.00)

Given the following:

- The plant is in Mode 5 with refueling operations in progress.
- The Core Alterations Surveillance Log shows that the refuel position one-rod-out interlock surveillance was last completed at 0800.

Then, when performed at 2130 by operations, the one-rod-out interlock surveillance failed. What actions are required in accordance with CPS Technical Specifications?

a. Immediately suspend loading of irradiated fuel into the RPV; initiate action to restore Secondary Containment to operable.

b. Immediately suspend in-vessel fuel movement with equipment associated with the inoperable interlock and insert all insertable control rods.

c. Immediately suspend control rod withdrawal and initiate actions to fully insert all insertable control rods in cells containing one or more fuel assemblies.

d. Immediately initiate action to insert all insertable control rods and place the mode switch in the SHUTDOWN position in 1 hour.

QUESTION: 100 (1.00)

Authorization to receive radiological exposures in excess of 10CFR20 limits is the responsibility of the _____.

a. Recovery Manager

b. Emergency Director

c. Radiation Protection Coordinator

d. Radiological Assessment Coordinator

(********** END OF EXAMINATION **********)

ANSWER: 001 c.

REFERENCE:
LP87212, Reactor Protection System, Student Handbook, Pg 22 of 32.
New
Level of Difficulty (1 - 5): 2
295005K101

ANSWER: 002 b.

REFERENCE:
LP 85233
Direct
Level of Difficulty (1 - 5): 3
233000K102

ANSWER: 003 d

REFERENCE:
CPS4008.01, Abnormal Reactor Coolant Flow
New
Level of Difficulty (1 - 5): 2
295001 2.2.2

ANSWER: 004 a.

REFERENCE:
LP 85264, Diesel Generator, Student Handbook, pg. 66.
LP 85571, Auxiliary Power Systems, pgs. 11, 17, 37, & 45
Direct
Level of Difficulty (1 - 5): 2
295003A102

ANSWER: 005 b.

REFERENCE:
CPS 4201.01, Loss of DC Power, Section 4.4
New
Level of Difficulty (1 - 5): 3
295004K303

ANSWER: 006 a.

REFERENCE:
LP 85245, Main Turbine, Revision 1; LP 85249, Electro Hydraulic Control System, Revision 1.
Direct
Level of Difficulty (1 - 5): 3
295006K204

ANSWER: 007 a.

REFERENCE:
LP 85205, Residual Heat Removal System, Revision 4
Direct (RO Written 1/98, Question # 35)
Level of Difficulty (1 - 5): 2
295007K205

ANSWER: 008 c.

REFERENCE:
LP 85217, RCIC, Student Handbook, pg. 63
LP 85259, Feedwater, Instructor Handbook, pg. 57 & Student Handbook, pg. 27
LP 85245, Main Turbine, Instructor Handbook, pgs. 47 & 48.
LP 85380, HPCS, Student Handbook, pg. 27
New
Level of Difficulty (1 - 5): 2
295008K101

ANSWER: 009 b.

REFERENCE:
LP85423, Nuclear Boiler Instrumentation, Student Handbook, Figure 6
New
Level of Difficulty (1 - 5): 2
295009K201

ANSWER: 010 c.

REFERENCE:
LP 85405, Combustible Gas Control System, pg. 8, 11, 12, & 32
EOP-6 Technical Bases, pg. 8-44
New
Level of Difficulty (1 - 5): 3
295010 2.4.20

ANSWER: 011 a.

REFERENCE:
EOP-6 Technical Bases, pg. 8-39
New
Level of Difficulty (1 - 5): 2
295011K301

ANSWER: 012 c.

REFERENCE:
LP 85222, Drywell Cooling System, Student Handbook, pg. 41
Modified
Level of Difficulty (1 - 5): 3
295012K101

ANSWER: 013 a.

REFERENCE:
CPS 4005.01, Loss of Feedwater Heating, Section 3.0 (Immediate Operator Actions)
New
Level of Difficulty (1 - 5): 4
295014A106

ANSWER: 014 a.

REFERENCE:
Clinton EOP Technical Bases, EOP-1, RPV CONTROL
New
Level of Difficulty (1 - 5): 2
295015A202

ANSWER: 015 a.

REFERENCE:
CPS 4003.01, Remote Shutdown, Section 4.3.d
Modified
Level of Difficulty (1 - 5): 3
295016A108

ANSWER: 016 d.

REFERENCE:
LP 85273, Area & Process Radiation Monitoring, Student Handbook, pgs.47 & 72
Direct
Level of Difficulty (1 - 5): 3
295017K210

ANSWER: 017 d.

REFERENCE:
LP 85301, Service & Instrument Air, Student Handbook, pgs. 41 - 43.
New
Level of Difficulty (1 - 5): 2
295019A202

ANSWER: 018 c.

REFERENCE:
CPS 3304.01, Control Rod Hydraulic & Control, Section 8.3, Abnormal Operations
Direct
Level of Difficulty (1 - 5): 2
295022A203

ANSWER: 019 c.

REFERENCE:
LP85233-03, Fuel Pool Cooling and Cleanup System, Student Handbook
Modified
Level of Difficulty (1 - 5): 2
295023K101

ANSWER: 020 b.

REFERENCE:
LP 85455, Containment Ventilation and Drywell Purge System, Student Handbook, pgs 50-57.
New
Level of Difficulty (1 - 5): 3
295024A118

ANSWER: 021 b.

REFERENCE:
Clinton EOP Technical Bases, EOP-1, RPV CONTROL
New
Level of Difficulty (1 - 5): 3
295025A204

ANSWER: 022 d.

REFERENCE:
Clinton EOP 6, Primary Containment Control
New
Level of Difficulty (1 - 5): 3
295026K301

ANSWER: 023 b.

REFERENCE:
Clinton EOP Technical Bases, Variable & Curves Section, Detail A (pgs 12-17 to 12-19)
New
Level of Difficulty (1 - 5):3
295027K102

ANSWER: 024 d.

REFERENCE:
Clinton EOP Technical Bases, pg. 12-57
New
Level of Difficulty (1 - 5): 2
295029K301

ANSWER: 025 d.

REFERENCE:
LP 85408-01, Suppression Pool Makeup System, Student Handbook, pgs 13 - 17.
Direct
Level of Difficulty (1 - 5): 2
295030A104

ANSWER: 026 a.

REFERENCE:
Clinton EOP Technical Bases, EOP-1A, ATWS RPV CONTROL
Modified
Level of Difficulty (1 - 5): 3
295031K103

ANSWER: 027 c.

REFERENCE:
Clinton EOP Technical Bases, EOP-1, Pgs 27 - 29
New
Level of Difficulty (1 - 5): 3
295031K305

ANSWER: 028 a.

REFERENCE:
LP85273-02, Area and Process Radiation Monitoring, Student Hndbk, Pgs 23-27 and 70-71.
Direct
Level of Difficulty (1 - 5): 2
295033A106

ANSWER: 029 a.

REFERENCE:
CPS No. 4001.02 C001
LP85261, Standby Gas Treatment System, Student Handbook, Summary
Direct (Question # 95, Clinton RO Exam, 2/98)
Level of Difficulty (1 - 5): 2
295034K203

ANSWER: 030 c.

REFERENCE:
LP 87212-01, Reactor Protection System, Student Handbook, Section 1.1.1, pg. 9 of 32
Section 2.1.2.2 & 2.1.4, pgs 12 & 13 of 32
Modified
Level of Difficulty (1 - 5): 3
295037K307

ANSWER: 031 b.

REFERENCE:
Clinton EOP Technical Basis, EOP-9, pg. 11-4
New
Level of Difficulty (1 - 5): 3
295038K102

ANSWER: 032 a.

REFERENCE:
CPS 3304.01, CONTROL ROD HYDRAULIC & CONTROL (RD), Section 8.3.5
Direct
Level of Difficulty (1 - 5): 3
201003K407

ANSWER: 033 a.

REFERENCE:
LP87401-02, Rod Control & Information System, Student Handbook, pg. 11-41.
New
Level of Difficulty (1 - 5): 2
201005A301

ANSWER: 034 b.

REFERENCE:
TS 3.4.1
New
Level of Difficulty (1 - 5): 2
202001 2.1.33

ANSWER: 035 b.

REFERENCE:
LO 87402-01, RR Flow Control System, Student Handbook, pgs. 7/21 & 13/21.
New
Level of Difficulty (1 - 5): 3
202002A208

ANSWER: 036 d.

REFERENCE:
LP85205, Residual Heat Removal, Student Handbook, pg. 42 & 43 of 47.
Direct
Level of Difficulty (1 - 5): 3
203000A309

ANSWER: 037 a.

REFERENCE:
LP85204-07, Reactor Water Cleanup System, Student Handbook, pg. 12/31.
Modified
Level of Difficulty (1 - 5): 2
204000A210

ANSWER: 038 d.

REFERENCE:
LP85205-04, Residual Heat Removal, Student Handbook
CPS 4003.01008, RSP-Div 1 Shutdown Cooling Operation.
Modified (Clinton SRO Exam 2/98, Q # 45)
Level of Difficulty (1 - 5): 2
295021A203

ANSWER: 039 d.

REFERENCE:
LP 85209, Low Pressure Core Spray, Student Handbook, pgs. 13 - 16 of 27.
Direct (CLINTON 2/98 RO EXAM QUESTION # 22)
Level of Difficulty (1 - 5): 2
209001K408

ANSWER: 040 b.

REFERENCE:
LP85380-03, High Pressure Core Spray, Student Handbook, pgs. 17, 18, 23, & 26 of 29.
New
Level of Difficulty (1 - 5): 3
209002K602

ANSWER: 041 d.

REFERENCE:
LP85211-03, Standby Liquid Control System, Student Handbook, pgs. 18 & 19.
Modified
Level of Difficulty (1 - 5): 2
211000A109

ANSWER: 042 d.

REFERENCE:
LP 87212, Reactor Protection System, Student Handbook, pg. 15 of 32
Modified
Level of Difficulty (1 - 5): 2
212000K401

ANSWER: 043 a.

REFERENCE:
LP85212-02, Source Range Monitoring System, Student Handbook, pgs. 34 - 37 & 45.
Direct
Level of Difficulty (1 - 5): 3
215004K401

ANSWER: 044 c.

REFERENCE:
CPS 4411.07, RPV LEVEL INSTRUMENTATION
New
Level of Difficulty (1 - 5): 3
216000A207

ANSWER: 045 c.

REFERENCE:
LP85217-02, Reactor Core Isolation Cooling System, Student Handbook, pgs. 28 - 29/61.
Direct
Level of Difficulty (1 - 5): 2
217000 2.1.31

ANSWER: 046 c.

REFERENCE:
LP87218-01, Engineered Safety Systems Actuation System, Student Handbook, pg. 39
LP 85239, Main Steam System, Student Handbook, pgs. 25 & 55.
Direct
Level of Difficulty (1 - 5): 2
218000K201

ANSWER: 047 a.

REFERENCE:
LP85455-02, Containment Ventilation and Drywell Purge System, Student Hndbk, pgs.20 - 23.
LP85405-02, Combustible Gas Control System, Student Handbook, pg. 16
New
Level of Difficulty (1 - 5): 2
223001K501

ANSWER: 048 d.

REFERENCE:
LP85205-04, Residual Heat Removal System, Student Handbook, pg. 32/47.
Modified
Level of Difficulty (1 - 5): 4
226001A105

ANSWER: 049 b.

REFERENCE:
CPS Tech Specs 3.1.1, Shutdown Margin
New
Level of Difficulty (1 - 5): 3
234000A103

ANSWER: 050 c.

REFERENCE:
LP85239-04, Main Steam System, Student Handbook, pg 24/42.
Modified
Level of Difficulty (1 - 5): 2
239001K201

ANSWER: 051 d.

REFERENCE:
LP85253-02,Generator Stator Cooling System, Student Handbook, pgs. 23 - 25, 28 - 29.
Annunciator Response Procedure CPS 5200-3A, Generator Protection Circuit Energized.
Modified
Level of Difficulty (1 - 5): 4
241000K616

ANSWER: 052 d.

REFERENCE:
LP85247-02, Turbine Oil System, Student Handbook, pg. 34/48.
Annunciator Window 5017-6A, Auto Start Turb Auxiliary Pump/Motor.
New
Level of Difficulty (1 - 5): 3
245000K610

ANSWER: 053 d.

REFERENCE:
Off Normal Procedure, 4005.01, "Loss of Feedwater Heating," Revision 14, Section 3.0
Direct (Clinton SRO Exam 2/98, Q # 86)
Level of Difficulty (1 - 5): 3
259001A202

ANSWER: 054 b.

REFERENCE:
LP87570-01, Feedwater Control System, Student Handbook, pg. 49.
CPS 3103.01, Feedwater, Section 8.3.2
Modified
Level of Difficulty (1 - 5): 2
259002A306

ANSWER: 055 c.

REFERENCE:
CPS No. 3319.01, Standby Gas Treatment (VG), Section 8.1.3
Modified
Level of Difficulty (1 - 5): 3
261000K401

ANSWER: 056 b.

REFERENCE:
CPS 42001.01, Loss of AC Power, Section 2.1.
Modified
Level of Difficulty (1 - 5): 2
262001K602

ANSWER: 057 c.

REFERENCE:
LP85576-01, Uninterruptible Power Supply System, Student Handbook, pgs. 6/9 & 7/9.
Modified
Level of Difficulty (1 - 5): 4
262002A401

ANSWER: 058 d.

REFERENCE:
LP85264-02, Diesel Generator/Diesel Fuel Oil System, Student Handbook, pg. 73.
Modified
Level of Difficulty (1 - 5): 2
264000A404

ANSWER: 059 b.

REFERENCE:
LP86614-03, Fuel Handling Equipment, Student Handbook, pgs. 65/117 - 67/117,
Modified
Level of Difficulty (1 - 5): 3
272000A212

ANSWER: 060 c.

REFERENCE:
CPS 3213.01
New
Level of Difficulty (1 - 5): 3
286000A301

ANSWER: 061 c.

REFERENCE:
CPS No. 4001.02
New
Level of Difficulty (1 - 5): 2
290001A301

ANSWER: 062 d.

REFERENCE:
CPS No. 3203.01, 3302.01
New
Level of Difficulty (1 - 5): 2
400000K301

ANSWER: 063 b.

REFERENCE:
Technical Specification 3.7.4
Modified
Level of Difficulty (1 - 5): 2
2.1.11

ANSWER: 064 a.

REFERENCE:
Technical Specification 1.1, Definitions, Table 1.1-1
New
Level of Difficulty (1 - 5): 2
2.1.22

ANSWER: 065 d.

REFERENCE:
CPS1401.01, Operating Philosophy, Section 8.3.2.3.c
New
Level of Difficulty (1 - 5): 2
2.1.29

ANSWER: 066 a.

REFERENCE:
CPS 1005.07, CPS Procedures and Documents: Temporary Changes, Sections 2.2.5; 2.2.10; 8.2.1; and 8.4.10.
New
Level of Difficulty (1 - 5): 3
2.2.11

ANSWER: 067 c.

REFERENCE:
CPS 1014.01, Clearance and Tagging Manual, Section 8.6.4, Step 4
New
Level of Difficulty (1 - 5):2
VALIDATE AT THE SITE
2.2.13

ANSWER: 068 a.

REFERENCE:
LP87465-05, Conduct of Operations, Student Handbook, ph 12/33.
New
Level of Difficulty (1 - 5): 2
2.2.23

ANSWER: 069 b.

REFERENCE:
CPS 3703.01, Core Alterations, Section 2.2.2 (pg. 4/48).
Direct
Level of Difficulty (1 - 5): 2
2.2.28

ANSWER: 070 a.

REFERENCE:
Clinton EOP Technical Basis, EOP-8, pg. 10-4
Direct
Level of Difficulty (1 - 5): 3
295035A201

ANSWER: 071 b.

REFERENCE:
10 CFR 20.1204
New
Level of Difficulty (1 - 5): 3
2.3.2

ANSWER: 072 d.

REFERENCE:
EPIP RA-03, Radiological Exposure Guidelines, Section 4.2 (pg. 4/6).
Modified
Level of Difficulty (1 - 5): 2
2.3.4

ANSWER: 073 c.

REFERENCE:
CPS 1001.06, CPS Fire Brigade, Section 2.2.5 (pg. 4/15)
CPS 1893.00, Operational Fire Protection Program, Section 3.6 (pg. 5/10)
CPS 1401.05, Operator Logs & Records, Section 8.3.7 (Table 1) pg. 10/26
Modified (Clinton 2/98 RO Exam, Q # 9)
Level of Difficulty (1 - 5): 2
2.4.25

ANSWER: 074 b.

REFERENCE:
EPIP FE-01, TSC Operations, Section 4.6, pg 6/7.
Modified
Level of Difficulty (1 - 5): 2
2.4.29

ANSWER: 075 c.

REFERENCE:
EOP-8, Secondary Containment Control
New
LOD: 3
2.4.4

ANSWER: 076 b.

REFERENCE:
CPS No. 4100.01, Reactor Scram, Section 2.1, Control Rods Fully Insert
New
Level of Difficulty (1 - 5): 3
295020A203

ANSWER: 077 a.

REFERENCE:
CPS 4200.01, Section 6.3.5, p.19
Direct
LOD:2
295003K303

ANSWER: 078 a.

REFERENCE:
CPS No. 4007.02, Inadvertent Rod Movement, Section 3.3
New
LOD:3
295014K106

ANSWER: 079 d.

REFERENCE:
SD-MS
New
LOD:2
295010A202

ANSWER: 080 a.

REFERENCE:
LP87509, Suppression Pool, Step 1.7
LP85234, Objective .1
Direct
LOD:2
295013K201

ANSWER: 081 d.

REFERENCE:
CPS 4003.01, C001 & F003
LP 87503, "Remote Shutdown", L.O. - 1.4
Direct
LOD: 3
295016A108

ANSWER: 082 b. REFERENCE:
System description - CC
New
LOD: 2
295018A203

ANSWER: 083 c. REFERENCE:
CPS Technical Specifications 3.6.1.3.A.1 and Bases SR 3.6.1.3.6
New
LOD: 3
223002G005

ANSWER: 084 b. REFERENCE:
CPS No. 3313.03
New
LOD: 2
295021 2.1.32

ANSWER: 085 d. REFERENCE:
EOP-6, Primary Containment Control
New
LOD: 2
295024K102

ANSWER: 086 b. REFERENCE:
TS Basis 3.6.4.1, Secondary Containment
New
LOD: 4
295035A201

ANSWER: 087 a. REFERENCE:
CPS No. 4411.11, Hydrogen Control System Operation Section 2.6
New
LOD: 3
500000A103

ANSWER: 088 c. REFERENCE:
TS 3.1.3.C.1, & 2
New
LOD: 3
201001A210

ANSWER: 089 d. REFERENCE:
CPS Technical Specifications 3.3.2.1
New
LOD: 2
201005K507

ANSWER: 090 b. REFERENCE:
T.S. 3.1.3, 4, 5, & 6
New
LOD: 3
201003 2.1.33

ANSWER: 091 d. REFERENCE:
T.S.3.3.1.1.B.1
New
LOD: 3
215005 2.2.22

ANSWER: 092 b. REFERENCE:
CPS No. 3312.03, Paragraph 4.9
New
LOD: 2
219000 2.1.32

ANSWER: 093 c. REFERENCE:
CPS No. 9090.01, page 15
New
LOD: 3
234000A301

ANSWER: 094 c. REFERENCE:
CPS EOP-3
New
LOD: 2
239002A406

ANSWER: 095 c. REFERENCE:
CPS No. 1893.01, Fire Door Compensatory Measures, Appendix A, Section 3
New
LOD: 2
286000 2.1.33

ANSWER: 096 d. REFERENCE:
CPS No. 1401.04, Shift Turnover and Relief, Section 8.6.5
New
LOD: 2
2.1.3

ANSWER: 097 d.

REFERENCE:
CPS No. 1401.11, Planning and Control of Evolutions, Section 8.2
New
LOD: 2
2.1.9

ANSWER: 098 a.

REFERENCE:
CPS No. 1005.07, Temporary Change Approval Checklist, Section 1
New
LOD: 2
2.2.6

ANSWER: 099 c.

REFERENCE:
Technical Specifications SR 3.9.2.2: Perform CHANNEL FUNCTIONAL TEST, 7 days
LP87630, Objective .1.2.2
Direct
LOD: 2
2.2.24

ANSWER: 100 b.

REFERENCE:
EPIP EC-01, Attachment 2, page 1
New
LOD: 2
2.3.4

(********** END OF EXAMINATION **********)

ANSWER KEY

001 c	021 b	041 d	061 c	081 d
002 b	022 d	042 d	062 d	082 b
003 d	023 b	043 a	063 b	083 c
004 a	024 d	044 c	064 a	084 b
005 b	025 d	045 c	065 d	085 d
006 a	026 a	046 c	066 a	086 b
007 a	027 c	047 a	067 c	087 a
008 c	028 a	048 d	068 a	088 c
009 b	029 a	049 b	069 b	089 d
010 c	030 c	050 c	070 a	090 b
011 a	031 b	051 d	071 b	091 d
012 c	032 a	052 d	072 d	092 b
013 a	033 a	053 d	073 c	093 c
014 a	034 b	054 b	074 b	094 c
015 a	035 b ξα	055 c	075 c	095 c
016 d	036 d	056 b	076 b	096 d
017 d	037 a	057 c	077 a	097 d
018 c	038 d	058 d	078 a	098 a
019 c	039 d	059 b	079 d	099 c
020 b	040 b	060 c	080 a	100 b

(********** END OF EXAMINATION **********)