



**Commonwealth Edison**

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December 18, 1984

Mr. Harold R. Denton, Director  
Office of Nuclear Reactor Regulation  
U.S. Nuclear Regulatory Commission  
Washington, DC 20555

Subject: Braidwood Station Units 1 and 2  
On-Shift Operating Experience  
NRC Docket Nos. 50-456/457

- References (a): Byron Station Units 1 and 2, Safety  
Evaluation Report, NUREG-0876 Section 13.1.2.1
- (b): Administration of Operating Tests Prior  
to Initial Criticality (Generic Letter No.  
84-10)
- (c): Adequacy of On-Shift Operating Experience  
For Near Term Operating License Applicants  
(Generic Letter No. 84-16)
- (d): J. G. Marshall letter to H. R. Denton  
dated September 28, 1984

Dear Mr. Denton:

References (a), (b) and (c) present requirements for ensuring that shift operators have sufficient operating experience prior to initial criticality. The enclosure is Braidwood Station's Shift Experience Program. We request that you review the program and indicate to us your concurrence that it fulfills those requirements.

The Six Month Program was begun in April, 1984 when two people were sent to Zion Station. Two more began in October 1984. These will be followed at regular intervals until all required SRO's have completed the program.

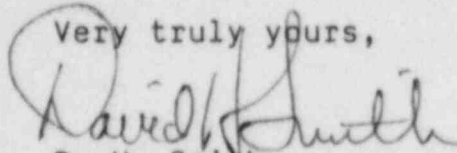
The eight week program began October 22, 1984 with eight people at Zion. The next class of eight will convene in January, 1985. This will be followed at approximately eight week intervals until all candidates have completed this program. This schedule permits all personnel to be trained by the last Quarter of 1985.

In Reference (d), we requested an exemption from Observation Training for a number of operators. We asked a reply by December 1, 1984 to permit scheduling of the January 1985 session. The lack or delay of these exemptions will cause significant unnecessary expense and inconvenience. Therefore, your prompt reply on this matter is requested.

Please direct any questions you may have concerning these matters to this office.

One (1) signed original and fifteen (15) copies of this letter are provided for your use. Because of its volume, three copies of the enclosure are included.

Very truly yours,



D. H. Smith

Nuclear Licensing Administrator

Enclosure

cc: Joseph I. McMillen - RIII  
Don H. Beckham - NRR, Operator  
Licensing Branch

9528N

### Braidwood Station's Shift Experience Program

In order to accommodate several requirements with regard to shift experience levels and observation training at an operating reactor, Braidwood Station has designed a program that will satisfy each requirement.

Specifically, the Byron Station Safety Evaluation Report (13.1.2.1), Generic Letter No. 84-10 and Generic Letter No. 84-16 (with enclosure) detail specific experience and/or training requirements for shift personnel and license candidates. Coupling the requirements contained in these documents with ANS 3.1, 1981, the programs to accomplish the needed training consist of the following:

- I. Six months of experience for one Senior Reactor Operator (SRO) per shift at an operating Westinghouse plant (six weeks of which shall be 20% power);
- II. Six weeks of experience for another SRO per shift at an operating Westinghouse plant (20% power);
- III. Eight weeks of observation training for all license candidates that don't have extensive actual operating experience at a comparable facility or are not specifically exempted by the NRC. (Currently we have an eight week simulator training phase and to achieve four months of combined simulator and observation training, an eight week length for the observation training program is necessitated.)

Qualification procedures which have been developed to address the above programs are enclosed as attachments 1 and 2 and are titled:

1. Braidwood Nuclear Station Senior Reactor Operator Six Month Hot Participation Procedure
2. Braidwood Nuclear Station Senior Reactor Operator Eight Week Hot Participation Procedure

The Braidwood Nuclear Station Senior Reactor Operator Six Month Hot Participation Program will be completed by those SROs who will be required to fulfill the six month on-shift experience requirements.

The Braidwood Nuclear Station Senior Reactor Operator Eight Week Hot Participation Program will be completed by the remainder of the Braidwood Senior Reactor Operator candidates and Reactor Operator candidates who are required to do so. By doing so, the six week on-shift experience requirement will be met as well as the requirement for on-shift observation training for cold license candidates.

The qualification procedures were compiled on the basis of INPO Guidelines 83-022, Zion Station's 3 month CJT program, the Commonwealth Edison Shift Control Room Engineer (SCRE) task analysis and informal review of Zion Station's administrative procedures to determine shift supervisor required actions.

Subsequent to the development of attachments 1 and 2, it was determined that an observation training program must be conducted for all appropriate personnel. To that end, a vendor will be contracted to provide on-shift training at Zion Station for 8 weeks. Classes will consist of 3 or 4 students per instructor and will spend at least 4 hours per day in the control room, covering all shifts on a rotating basis. Attachment 3 is an outline of that eight week schedule. Attachment 2 served as the basis for the development of attachment 3.

Observation training will thus serve to satisfy the requirement of six weeks hot experience for an SRO on shift. Those SROs who are required to spend six months at an operating plant will attend observation training and then spend an additional four months at the operating plant, completing items in attachment 1 that were not covered during observation training.

The Braidwood Station NRC Senior Resident Inspector has been appraised of our intention in these matters and his concurrence in our actions has been sought and obtained. It is requested that approval of our methods of satisfying the requirements discussed above be granted by your organization.



BRAIDWOOD NUCLEAR STATION  
SENIOR REACTOR OPERATOR  
SIX MONTH  
HOT PARTICIPATION PROCEDURE

A. STATEMENT OF APPLICABILITY

The purpose of this procedure is to describe the steps necessary for the successful completion of the Braidwood Nuclear Station Senior Reactor Operator Six Month Hot Participation Program. When this program has been completed, the participant will have gained 6 months of Hot Participation Experience at a plant similar to Braidwood. During this period, the SRO trainee will be involved in the review and discussion leading to decisions relative to operating a nuclear power plant.

This program includes the following requirements:

1. 6 months Hot Participation at Zion Station.
2. 6 weeks operation above 20% power.
3. Startup from subcritical to 20% power.
4. Shutdown from 20% power to cold shutdown.

B. REFERENCES

1. J. H. Miller's presentation to the NRC Commissioners, "Industry Evaluation of Operating Shift Experience Requirements," February 24, 1984.
2. INPO Guideline 83-022, June 1983, PWR Control Room Operator, Senior Control Room Operator, and Shift Supervisor Qualification.
3. Nuclear Station Directive, A09, Conduct of Operations.
4. Zion Administrative Procedure 2-52-1, Station Training Administrative Program.

C. PREREQUISITES

Individuals shall successfully complete an SRO Certification Program on a similar plant before beginning the Hot Participation Program.

D. MAIN BODY

1. Complete the SRO Hot Participation Training Resume (Attachment A) as follows:
  - a. The trainee, or a member of the Braidwood Station Training Department shall complete Section A (General Information) as follows:
    - 1) Name: Fill in name of trainee.

- 2) CECo Service Date: Fill in trainee's Company Service Date.
- b. The trainee, or a member of the Braidwood Station Training Department shall complete Section B (Education) as follows:
  - 1) List the formal training completed by the trainee at accredited colleges and/or universities. Indicate Major/Minor, date of graduation, and the school which issued the diploma.
- c. A member of the Braidwood Station Training Department shall complete Section C (Commonwealth Edison Training Courses) as follows:
  - 1) Senior Reactor Operator Training Program:
    - a) Indicate location and date of certification.
    - b) If licensed, indicate Unit on which licensed and date of license.
  - 2) Other Technical Courses:
    - a) Indicate course name, location and date of completion.
  - 3) CECo Management Courses:
    - a) Indicate course name, and date of completion.
2. The trainee should read all required reading items listed on the SRO Hot Participation Required Reading Form (Attachment B) before going on shift at Zion.
3. After completion of each required reading item, the trainee shall document that the required reading is complete by signing his/her name in the space provided on Attachment B.
4. The Job Qualification Checklists (Attachments C, D, and E) contain those tasks which shall be completed by the trainee while on shift at Zion Station.

a. General Instruction

Each task description is followed by a (P) or an (F). Those task descriptions followed by a (P) must be actually performed or observed by the trainee while on shift. The trainee is further required to demonstrate adequate knowledge relative to the performance of the evolution. The task descriptions followed by an (F), may be fulfilled by demonstrating adequate familiarity through simulation or discussion with designated on shift personnel. The preferred method of fulfilling a

task is by performance (P). The option of demonstrating familiarity (F) should be used only when a perform (P) is not possible or practical.

The Job Qualification Checklist Addendum Log will be completed by the trainee listing those activities which are not specifically listed on the Job Qualification Checklist.

b. Checklist Instructions

There are 3 SRO Hot Participation Job Qualification Checklists:

- 1) In plant SRO Hot Participation Job Qualification Checklist (Attachment C).

NOTE

The in-plant SRO Hot Participation portion may require up to one month of full-time effort.

This portion of the training program is designed to acquaint the trainee with the tasks of non-licensed operators (EO/EA's) outside the control room. During this period, the trainee should work closely with the Shift Engineer/Shift Foreman and, under his cognizance, should accompany non-licensed operators in their daily routines to become familiar with the various aspects of their job functions. The trainee should document his participation in as many of the following evolutions as possible:

- . local control and operation of equipment
- . surveillance testing of equipment
- . system valve and breaker lineups
- . shutdown/startup/shifting of pumps, filters, heat exchangers, ion exchangers and other components and systems.
- . monitoring of system parameters and equipment conditions during operations.
- . procedures and practices used for removing equipment from service for maintenance and, returning equipment to service.
- . procedures and practices used to minimize radiation exposure and control contamination.



The trainee should discuss those evolutions observed with the Shift Engineer/Shift Foreman who will "sign-off" each item. The trainee should be able to fulfill the following objectives for any evolution observed:

- . How the evolution affects unit availability.
- . Personnel safety precautions which should be observed while performing the evolution.
- . How the evolution impacts upon Reactor Safety.

The trainee is to complete all items on the Job Qualification Checklist (Attachment C) and, to document all additional items on the Job Qualification Checklist Addendum Log.

2) Reactor Operator Hot Participation Job Qualification Checklist:

NOTE

The Reactor Operator Hot Participation portion requires approximately two months of full-time effort.

During this portion of the program, the trainee will complete the Reactor Hot Participation Operator Qualification Checklist. Items in which the trainee participates that are not listed on the Qualification Checklist should be documented on the Job Qualification Checklist Addendum Log.

3) Shift Supervisor Hot Participation Job Qualification Checklist: The objective of this checklist is to directly involve the trainee in the review and discussion leading to decisions relative to operating a nuclear power plant. The trainee is to complete all items on the Shift Supervisor Hot Participation Job Qualification Checklist and to document all additional items on the Job Qualification Checklist Addendum Log.

5. The Braidwood Station Training Supervisor and the Ass't Superintendent of Operations shall sign the Braidwood Nuclear Station Hot Participation Experience Record (Attachment F) after verifying the trainee has successfully completed the Hot Participation Program requirements.





3. CECo Management Courses

A. Communication and Motivation (SAI)

\_\_\_\_\_  
Date

B. Rational Situation Management (KT)

\_\_\_\_\_  
Date

C. Others

\_\_\_\_\_  
Date

\_\_\_\_\_  
Date

\_\_\_\_\_  
Date

## SRO Hot Participation Required Reading

The trainee shall read the following documents:

Trainee Signature/Date

A. ZION ADMINISTRATIVE PROCEDURES

- |                 |  |       |
|-----------------|--|-------|
| 1. ZAP 0        | Conduct of Operation   | _____ |
| 2. ZAP 01       | Admitting and Control of<br>Westinghouse Trainees  | _____ |
| 3. ZAP 02       | Station Fire Fighting Forces   | _____ |
| 4. ZAP 02A      | Fire Protection Surveillance<br>Procedure  | _____ |
| 5. ZAP 02B      | Control of Flammable and Combustible<br>Liquids  | _____ |
| 6. ZAP 0-3      | Press Releases   | _____ |
| 7. ZAP 1-51-1   | Station Organization   | _____ |
| 8. ZAP 2-52-1   | Station Training Program   | _____ |
| 9. ZAP 2-52-3   | Operating Experience Feedback  | _____ |
| 10. ZAP 2-54-1  | On-Site Station Review   | _____ |
| 11. ZAP 2-54-2  | Plant Nuclear Safety Review<br>Committee   | _____ |
| 12. ZAP 2-54-3  | Emergency Operating Procedure<br>Review Committee  | _____ |
| 13. ZAP 3-51-1  | Origination and Routing of Work<br>Requests  | _____ |
| 14. ZAP 3-51-18 | Plant Modification Program   | _____ |
| 15. ZAP 2-51-2  | Non-Production Plant Work Orders   | _____ |
| 16. ZAP 3-51-4  | Procedure Governing the Use of<br>Temporary Jumper Cables, the Lifting<br>of Terminated Wires, The Bypassing<br>of Alarms, or The Installation Of<br>Mechanical Blocks or Bypasses | _____ |

|                 |   | <u>Trainee Signature/Date</u> |
|-----------------|---|-------------------------------|
| 17. ZAP 3-51-4B | Procedure for Non-Routine Valve Line-Ups  | _____                         |
| 18. ZAP 3-51-5  | Field Change Requests   | _____                         |
| 19. ZAP 3-51-6  | Evaluation of Component Parts   | _____                         |
| 20. ZAP 3-51-7  | Annunciator Alarm Review  | _____                         |
| 21. ZAP 3-52-1  | Change of Instrument Setpoint/Scaling   | _____                         |
| 22. ZAP 3-52-2  | OAD Periodic Relay Testing and Instrument Calibration Procedure Reportability to Zion Station | _____                         |
| 23. ZAP 3-52-3  | Zion Scaling Procedure  | _____                         |
| 24. ZAP 3-52-4  | Change of Protective Relay Setpoint   | _____                         |
| 25. ZAP 4-51-1  | Establishing Quality Requirements for Requests for Purchase and Requisition Cards             | _____                         |
| 26. ZAP 5-51-2  | Guidelines for an ALARA Review  | _____                         |
| 27. ZAP 5-51-3  | Procedure Periodic Review   | _____                         |
| 28. ZAP 5-51-4  | Procedure Control and Approval  | _____                         |
| 29. ZAP 5-51-5  | Procedure Content and Format  | _____                         |
| 30. ZAP 5-51-6  | Confined Space Entry  | _____                         |
| 31. ZAP 5-51-7  | Containment Access Control  | _____                         |
| 32. ZAP 5-51-8  | Access Control to the Control Room  | _____                         |
| 33. ZAP 5-51-9  | Liquid Waste Management   | _____                         |
| 34. ZAP 5-51-15 | High Radiation Area Access Control  | _____                         |
| 35. ZAP 5-51-16 | Reactor Cavity (Incore Shaft) Access Control  | _____                         |
| 36. ZAP 5-51-17 | Entry and Exit to Auxiliary Electrical Room   | _____                         |



|                  |   | <u>Trainee Signature/Date</u> |
|------------------|---|-------------------------------|
| 37. ZAP 5-51-18  | Personnel Termination Procedure   | _____                         |
| 38. ZAP 5-51-19  | Personnel Qualifications  | _____                         |
| 39. ZAP 6-52-1   | Zion Station Drawing Change Request Program                                       | _____                         |
| 40. ZAP 6-52-2   | Zion Station Document Control   | _____                         |
| 41. ZAP 6-52-3   | Zion Station Mail Receipt Control   | _____                         |
| 42. ZAP 6-52-4   | Zion Station General Office Master File Control                                   | _____                         |
| 43. ZAP 10-52-1  | Inspection Plan for Operations  | _____                         |
| 44. ZAP 10-52-2  | Operating Log Books   | _____                         |
| 45. ZAP 10-52-3  | Shift Manning, Relief, and Turnover   | _____                         |
| 46. ZAP 10-52-4  | Leak Reduction and Control Program  | _____                         |
| 47. ZAP 10-52-5  | Housekeeping  | _____                         |
| 48. ZAP 10-52-9  | Station Lubrication Report  | _____                         |
| 49. ZAP 10-52-10 | Vibration Monitoring/Analysis Program   | _____                         |
| 50. ZAP 10-53-1  | Inspection Plan - Surveillance  | _____                         |
| 51. ZAP 13-51-1  | Responsibilities, Movements, and Reporting Related to Safeguarding Nuclear Fuel   | _____                         |
| 52. ZAP 13-52-1  | Receiving, Handling, Storage, Packaging, and Shipping of Items in the Storeroom   | _____                         |
| 53. ZAP 13-52-2  | Preventive Maintenance & Limited Shelf Life of Safety-Related and ASME Code Items | _____                         |
| 54. ZAP 13-52-3  | Receiving and Storing Chemicals   | _____                         |
| 55. ZAP 13-52-4  | Handling, Storage and Control of Welding Materials                                | _____                         |

Trainee Signature/Date

- |                 |  |       |
|-----------------|--|-------|
| 56. ZAP 13-52-8 | Preparation and Shipment of Radioactive Material           | _____ |
| 57. ZAP 14-51-2 | Inspection, Test and Operating Status Tagging of Equipment | _____ |
| 58. ZAP 16-51-1 | Zion Station Action Item Record Program                    | _____ |

**B. ZION STATION RADIATION PROCEDURES**

- |                          |  |       |
|--------------------------|--|-------|
| 1. RP 1190-1             | Zion radiation protection general procedures                     | _____ |
| 2. RP 1210-3             | Personnel neutron monitoring                                     | _____ |
| 3. RP 1210-4             | Dose calculations, time limits and timekeeping                   | _____ |
| 4. RP 1230-1             | Lost film badge procedure  | _____ |
| 5. RP 1240 Series (1-22) | Survey instrument calibration and use                            | _____ |
| 6. RP 1280-1             | Radiation surveys  | _____ |
| 7. RP 1280-2             | Radiation level area surveys                                     | _____ |
| 8. RP 1310 Series (1-12) | Use of respiratory protective equipment                          | _____ |
| 9. RP 1320-1             | Personnel injury in controlled area                              | _____ |
| 10. RP 1330-1            | Working in radioiodine & tritium atmosphere                      | _____ |
| 11. RP 1340-1            | Personnel contamination procedure                                | _____ |
| 12. RP 1350-8            | Radiation monitor out of service and return to service procedure | _____ |
| 13. RP 1350-20-23        | Testing of breathing & working environments                      | _____ |

## Attachment B (Con't)

Trainee Signature/Date

|                 |  |       |
|-----------------|--|-------|
| 14. RP 1350-37  | High Radiation Monitor Alarm                               | _____ |
| 15. RP 1360-4   | Testing of breathing & working environments                | _____ |
| 16. RP 1410-1   | Protective clothing  | _____ |
| 17. RP 1410-2   | Washing protective clothing                                | _____ |
| 18. RP 1430-1   | Unconditional release of materials                         | _____ |
| 19. RP 1470-3   | Area and material decon                                    | _____ |
| 20. RP 1470-4   | Personnel decontamination                                  | _____ |
| 21. RP 1480-2   | Contamination surveys                                      | _____ |
| 22. RP 1490-1   | Contamination control points                               | _____ |
| 23. RP 1520-1&2 | Radioactive waste shipments                                | _____ |
| 24. RP 1610-5   | Containment entry procedure                                | _____ |
| 25. RP 1610-6   | Gas leaks in Aux. Building or Containment                  | _____ |
| 26. RP 1610-8   | Reactor coolant leak detection                             | _____ |
| 27. RP 1740-1   | Monitoring of high activity gas release during an accident | _____ |
| 28. RP 1740-2   | Setting up the emergency command center                    | _____ |
| 29. RP 1740-5   | Emergency equipment storage and location                   | _____ |
| 30. RP 1740-6   | Radioactive liquid spills                                  | _____ |

Trainee Signature/Date

- C. 10CFR20     STANDARDS FOR PROTECTION AGAINST RADIATION
- D. 10CFR50     LICENSING OF PRODUCTION AND UTILIZATION FACILITIES  
With Emphasis of Appendicies A,B, E,H,I,J,K and R
- E. 10CFR55     OPERATOR LICENSES  
Paragrapahs 55.1 thru 55.6, 55.20 thru 55.23, 55.30 thru 55.50
- F. 10CFR100    REACTOR SITE CRITERIA
- G. ZION FINAL SAFETY SNALYSIS REPORT (FSAR)
1. Chapter 9 - Auxiliary and Emergency Systems
    - 1.11 General design criteria 9.1
    - 1.2 CVCS design bases 9.2.1
    - 1.3 Component cooling system evaluation 9.3.3.3
    - 1.4 Spent Fuel pit cooling system 9.5
    - 1.5 Reactor components and fuel handling sys. 9.7
    - 1.6 Plant Ventilation 9.10
  2. Chapter 11 - Radioactive wastes and radiation protection
  3. Chapter 12 - Conduct of operation
    - 3.1 Precautionary planning section 12.3
    - 3.2 Records section 12.4
    - 3.3 Review and audit section 12.5
  4. Chapter 14 - Safety analysis
  5. Volumes VII and VIII - Review the questions and answers between the NRC and CWE



Trainee Signature/DateH. ZION UNIT 1 STARTUP TEST REPORT

\_\_\_\_\_

I. GENERATING STATION EMERGENCY PLAN

1. Generic GSEP

\_\_\_\_\_

2. EPIFs

\_\_\_\_\_

J. ZION STATION CHEMISTRY PROCEDURES

1. ZCP-200 Primary System Sampling Procedure

\_\_\_\_\_

2. ZCP-300 Zion Station Liquid Releases

\_\_\_\_\_

3. ZCP-304 Containment Venting & Purging  
Analysis

\_\_\_\_\_

4. ZCP-306 Continuous Gaseous Release  
Calculations

\_\_\_\_\_

K. PLANT MODIFICATIONS1. Review recent modifications and setpoint  
changes.

\_\_\_\_\_

L. OPERATING EXPERIENCE REPORTS (OPEX)1. Read major operating experience reports from  
other plants.

\_\_\_\_\_

2. Read major and recent (last year) Zion LER's.

\_\_\_\_\_

M. ZION SETPOINT STUDY WCAP 7922

\_\_\_\_\_

N. INSTRUMENT FAILURE RESPONSE MANUAL

\_\_\_\_\_

1. Review plant response to instrument  
failures.

\_\_\_\_\_

Job Qualification Checklist Addendum Log

Item Description: \_\_\_\_\_ (P) or (F) \_\_\_\_\_  
SE/SF/SCRE Sign/Date

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Item Description: \_\_\_\_\_ (P) or (F) \_\_\_\_\_  
SE/SF/SCRE Sign/Date

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\_\_\_\_\_  
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Item Description: \_\_\_\_\_ (P) or (F) \_\_\_\_\_  
SE/SF/SCRE Sign/Date

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Item Description: \_\_\_\_\_ (P) or (F) \_\_\_\_\_  
SE/SF/SCRE Sign/Date

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Item Description: \_\_\_\_\_ (P) or (F) \_\_\_\_\_  
SE/SF/SCRE Sign/Date

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\_\_\_\_\_  
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Item Description: \_\_\_\_\_ (P) or (F) \_\_\_\_\_  
SE/SF/SCRE Sign/Date

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

IN PLANT HOT PARTICIPATION  
JOB QUALIFICATION CHECKLIST

1. Participate in the installation or removal of temporary jumper cables, the lifting of terminated wires, the bypassing of alarms, or the installation of mechanical blocks or bypasses. (ZAP 3-51-4)

(P) or (F) \_\_\_\_\_ / \_\_\_\_\_  
SF Date

2. Participate in a fire drill as a Fire Brigade Member (ZAP-02)

(P) or (F) \_\_\_\_\_ / \_\_\_\_\_  
SF Date

3. Discuss the procedure for or perform an entry into a high radiation area (ZAP 5-51-15).

(Performance Optional) (P) or (F) \_\_\_\_\_ / \_\_\_\_\_  
SF Date

4. Participate in an auxiliary electrical room entry (ZAP 5-51-17).

(P) \_\_\_\_\_ / \_\_\_\_\_  
SF Date

5. Perform the Equipment Attendant rounds under his cognizance. (ZAP 10-52-1).

(P) Dayshift (T<sub>2</sub>) \_\_\_\_\_ / \_\_\_\_\_  
SF Date

(P) Afternoon (T<sub>1</sub>) \_\_\_\_\_ / \_\_\_\_\_  
SF Date

(P) Mids (Aux Bldg) \_\_\_\_\_ / \_\_\_\_\_  
SF Date

6. Participate in a shift turnover (ZAP 10-52-3).

EA (P) \_\_\_\_\_ / \_\_\_\_\_  
SF Date

EO (P) \_\_\_\_\_ / \_\_\_\_\_  
SF Date

7. Participate in the lubrication of equipment (ZAP 10-52-9).

(P) \_\_\_\_\_ / \_\_\_\_\_  
SF Date

8. Take vibration readings on category I equipment. (ZAP 10-52-10).

(P) \_\_\_\_\_ / \_\_\_\_\_  
SF Date

9. Participate in the inspection, tagging out, testing and return to service of plant equipment. (ZAP 14-51-2)

EA (P) \_\_\_\_\_ / \_\_\_\_\_  
SF Date

EO (P) \_\_\_\_\_ / \_\_\_\_\_  
SF Date

10. Initiate a work request. (ZAP 3-51-1)

(P) \_\_\_\_\_ / \_\_\_\_\_  
SF Date

11. Stand an 8 hour shift at the Radwaste Panel.

(P) \_\_\_\_\_ / \_\_\_\_\_  
SF Date

12. Discuss refueling operations and tools with Fuel Handling Foreman.

\_\_\_\_\_/\_\_\_\_\_  
Fuel Handling Foreman Date

13. Verify/Change lineup of Waste Gas System for release or use as cover gas.

(P) or (F) \_\_\_\_\_ / \_\_\_\_\_  
Radwaste Foreman Date



REACTOR OPERATOR HOT PARTICIPATION  
JOB QUALIFICATION CHECKLIST

NOTE

The trainee shall participate in the control room during the following evolutions.

1. 6 weeks operation above 20% Reactor Power.  
\_\_\_\_\_/\_\_\_\_\_  
SF Date
2. A refueling outage or a plant startup following an outage.  
\_\_\_\_\_/\_\_\_\_\_  
SF Date

NOTE

During this period, the trainee should perform or demonstrate familiarity with the following duties of a control room operator under the direct supervision and guidance of a qualified control room operator.

3. Reactor Startup:
  - a) Subcritical to Critical.  
(P) \_\_\_\_/\_\_\_\_  
NSO/SF Date
  - b) Critical to 2% power.  
(P) \_\_\_\_/\_\_\_\_  
NSO/SF Date
  - c) Reactor power increase from 2% power to 20% power.  
(P) \_\_\_\_/\_\_\_\_  
NSO/SF Date
4. Reactor Shutdown:
  - a) Reactor power decrease from 20% power to Hot Standby (mode 3).  
(P) \_\_\_\_/\_\_\_\_  
NSO/SF Date
  - b) Hot Standby to Mode 4 Hot Shutdown.  
(P) \_\_\_\_/\_\_\_\_  
NSO/SF Date
  - c) Mode 4 Hot Shutdown to Mode 5 Cold Shutdown.  
(P) \_\_\_\_/\_\_\_\_  
NSO/SF Date

5. Manual control of steam generator levels during plant start-up and/or shutdown.

(P) \_\_\_\_\_/\_\_\_\_\_  
NSO/SF Date

6. Boration during power operation.

(P) \_\_\_\_\_/\_\_\_\_\_  
NSO/SF Date

7. Dilution during power operation.

(P) \_\_\_\_\_/\_\_\_\_\_  
NSO/SF Date

8. Reactor power changes of 10% or greater when rod control is in manual.

(P) \_\_\_\_\_/\_\_\_\_\_  
NSO/SF Date

9. Operation of turbine controls during turbine start-up.

(P) \_\_\_\_\_/\_\_\_\_\_  
NSO/SF Date

10. Synchronization of the main generator with the grid.

(P) \_\_\_\_\_/\_\_\_\_\_  
NSO/SF Date

11. Control room operations during 3 shifts of refueling.

(P) \_\_\_\_\_/\_\_\_\_\_  
NSO/SF Date

12. Residual heat removal system startup and shutdown.

(P) \_\_\_\_\_/\_\_\_\_\_  
NSO/SF Date

13. Control of primary pressure under solid water conditions.

(P) \_\_\_\_\_/\_\_\_\_\_  
NSO/SF Date

14. Incore instrumentation system operation.

(P) \_\_\_\_\_/\_\_\_\_\_  
NSO/SF Date

15. Large change in Reactor Power.

(P) \_\_\_\_\_/\_\_\_\_\_  
NSO/SF Date

16. Large rate of change in Reactor Power (Rate of change greater than required for normal operations i.e. abnormal condition)  
--(optional).

(P) \_\_\_\_\_/\_\_\_\_\_  
NSO/SF Date

17. Participate in a fire drill as a Control Room Operator.  
(ZAP -02)

(P) or (F) \_\_\_\_\_/\_\_\_\_\_  
NSO/SF Date

18. Discuss the NSO responsibilities in the Station Organization.  
(ZAP 1-51-1)

\_\_\_\_\_/\_\_\_\_\_  
NSO/SF Date

19. Originate a Work Request (ZAP 3-51-1)

\_\_\_\_\_/\_\_\_\_\_  
NSO/SF Date

20. Discuss the actions required by the NSO during a containment entry (ZAP 5-51-7)

\_\_\_\_\_/\_\_\_\_\_  
NSO/SF Date

21. Maintain unit operators logbook for entire shift. (ZAP 10-52-2)

(P) Day \_\_\_\_\_ / \_\_\_\_\_  
NSO/SF Date

(P) Afternoon \_\_\_\_\_ / \_\_\_\_\_  
NSO/SF Date

(P) Mids \_\_\_\_\_ / \_\_\_\_\_  
NSO/SF Date

22. Maintain center desk operators logbook (ZAP 10-52-2)

(P) Day \_\_\_\_\_ / \_\_\_\_\_  
NSO/SF Date

(P) Afternoon \_\_\_\_\_ / \_\_\_\_\_  
NSO/SF Date

(P) Mids \_\_\_\_\_ / \_\_\_\_\_  
NSO/SF Date

23. Participate in a shift turnover (ZAP 10-52-3)

(P) \_\_\_\_\_ / \_\_\_\_\_  
Center Desk Date

(P) \_\_\_\_\_ / \_\_\_\_\_  
Unit Operator Date

24. Calculate an estimated critical condition.

(P) or (F) \_\_\_\_\_ / \_\_\_\_\_  
NSO/SF Date

25. Perform or assist with the following surveillance tests:

PT-0 Unit Shift Surveillance

Appx B/B-1, Shutdown Margin Verification (Modes 2, 3, 4, 5, & 6).

(P) Shift 1 \_\_\_\_\_ / \_\_\_\_\_  
NSO/SF Date

(P) Shift 2 \_\_\_\_\_ / \_\_\_\_\_  
NSO/SF Date

(P) Shift 3 \_\_\_\_\_ / \_\_\_\_\_  
NSO/SF Date



Appx D, Operating Surveillance Checksheet

(P) Shift 1 \_\_\_\_\_ / \_\_\_\_\_  
NSO/SF Date

(P) Shift 2 \_\_\_\_\_ / \_\_\_\_\_  
NSO/SF Date

(P) Shift 3 \_\_\_\_\_ / \_\_\_\_\_  
NSO/SF Date

Appx E, Operating Surveillance.

(P) Shift 1 \_\_\_\_\_ / \_\_\_\_\_  
NSO/SF Date

(P) Shift 2 \_\_\_\_\_ / \_\_\_\_\_  
NSO/SF Date

(P) Shift 3 \_\_\_\_\_ / \_\_\_\_\_  
NSO/SF Date

Appx F, Operating Surveillance Checksheet (Modes 3 & 4)

(P) Shift 1 \_\_\_\_\_ / \_\_\_\_\_  
NSO/SF Date

(P) Shift 2 \_\_\_\_\_ / \_\_\_\_\_  
NSO/SF Date

(P) Shift 3 \_\_\_\_\_ / \_\_\_\_\_  
NSO/SF Date

Appx G, Operating Surveillance Checksheet (Modes 1 & 2)

(P) Shift 1 \_\_\_\_\_ / \_\_\_\_\_  
NSO/SF Date

(P) Shift 2 \_\_\_\_\_ / \_\_\_\_\_  
NSO/SF Date

(P) Shift 3 \_\_\_\_\_ / \_\_\_\_\_  
NSO/SF Date

Appx H, Control Rod Alignment Checksheet (Modes 1 & 2)

(P) Shift 1 \_\_\_\_\_ / \_\_\_\_\_  
NSO/SF Date

(P) Shift 2 \_\_\_\_\_ / \_\_\_\_\_  
NSO/SF Date

(P) Shift 3 \_\_\_\_\_ / \_\_\_\_\_  
NSO/SF Date

Appx I, Excore Detector Outputs and Quadrant Power Tilt Ratio  
(Mode 1 > 50%).

(P) Shift 1 \_\_\_\_\_ / \_\_\_\_\_  
NSO/SF Date

(P) Shift 2 \_\_\_\_\_ / \_\_\_\_\_  
NSO/SF Date

(P) Shift 3 \_\_\_\_\_ / \_\_\_\_\_  
NSO/SF Date

Appx J-1, Normal and Reserve Off Site AC Power Availability.

(P) Shift 3 \_\_\_\_\_ / \_\_\_\_\_  
NSO/SF Date

Appx J-2, Onsite AC & DC Power Availability.

(P) Shift 3 \_\_\_\_\_ / \_\_\_\_\_  
NSO/SF Date

Appx K, Station Battery Daily Record

(P) Shift 2 \_\_\_\_\_ / \_\_\_\_\_  
NSO/SF Date

Appx L, Reactor Protection Channel check & E.S.S.  
Instrumentation Channel Check (Modes 1, 2, 3, & 4).

(P) Shift 1 \_\_\_\_\_ / \_\_\_\_\_  
NSO/SF Date

(P) Shift 2 \_\_\_\_\_ / \_\_\_\_\_  
NSO/SF Date

(P) Shift 3 \_\_\_\_\_ / \_\_\_\_\_  
NSO/SF Date

Appx M, Calormetric

(P) Shift 2 \_\_\_\_\_ / \_\_\_\_\_  
NSO/SF Date

Appx N, Radiation Monitor Check

(P) Shift 1 \_\_\_\_\_ / \_\_\_\_\_  
NSO/SF Date

Appx P, Power History Log

(P) Shift 1 \_\_\_\_\_ / \_\_\_\_\_  
NSO/SF Date

(P) Shift 2 \_\_\_\_\_ / \_\_\_\_\_  
NSO/SF Date

(P) Shift 3 \_\_\_\_\_ / \_\_\_\_\_  
NSO/SF Date

PT-1 Rod Cluster Exercise

(P) or (F) \_\_\_\_\_ / \_\_\_\_\_  
NSO/SF Date

PT-2A Safety Injection Pump Tests

(P) or (F) \_\_\_\_\_ / \_\_\_\_\_  
NSO/SF Date

PT-2C ECCS Valve Interlock Test

(P) or (F) \_\_\_\_\_ / \_\_\_\_\_  
NSO/SF Date

PT-2E Spurious Valve Actuation Group  
De-energization Check

(P) or (F) \_\_\_\_\_ / \_\_\_\_\_  
NSO/SF Date

PT-2I Centrifugal Chg. Pump Tests

(P) or (F) \_\_\_\_\_ / \_\_\_\_\_  
NSO/SF Date

PT-2J RHR Pump Tests

(P) or (F) \_\_\_\_\_ / \_\_\_\_\_  
NSO/SF Date

PT-2R Penetration Press. Compressor Test

(P) or (F) \_\_\_\_\_ / \_\_\_\_\_  
NSO/SF Date

Attachment D (Con't)  
Rev. 1

|        |  |                       |               |
|--------|--|-----------------------|---------------|
| PT-3B  | Isolation Valve Seal Water<br>(P) or (F)       | _____/_____<br>NSO/SF | _____<br>Date |
| PT-3C  | Penetration Pressurization Tests<br>(P) or (F) | _____/_____<br>NSO/SF | _____<br>Date |
| PT-3D  | MSIV Test<br>(P) or (F)                        | _____/_____<br>NSO/SF | _____<br>Date |
| PT-4A  | N.I.S. Functional Test S.R.<br>(P) or (F)      | _____/_____<br>NSO/SF | _____<br>Date |
| PT-4B  | N.I.S. Functional Test I.R.<br>(P) or (F)      | _____/_____<br>NSO/SF | _____<br>Date |
| PT-5   | Reactor Protection Logic<br>(P) or (F)         | _____/_____<br>NSO/SF | _____<br>Date |
| PT-5A  | Reactor Protection Logic<br>(P) or (F)         | _____/_____<br>NSO/SF | _____<br>Date |
| PT-5B  | Reactor Protection Logic<br>(P) or (F)         | _____/_____<br>NSO/SF | _____<br>Date |
| PT-6   | Containment Spray Pump Test<br>(P) or (F)      | _____/_____<br>NSO/SF | _____<br>Date |
| PT-7   | Aux. Feedwater Pump Test<br>(P) or (F)         | _____/_____<br>NSO/SF | _____<br>Date |
| PT-9   | Service Water Valve Tests<br>(P) or (F)        | _____/_____<br>NSO/SF | _____<br>Date |
| PT-10  | Safeguards Actuations Tests<br>(P) or (F)      | _____/_____<br>NSO/SF | _____<br>Date |
| PT-10A | Safeguards Logic Test<br>(P) or (F)            | _____/_____<br>NSO/SF | _____<br>Date |
| PT-10B | Safeguards Logic Test<br>(P) or (F)            | _____/_____<br>NSO/SF | _____<br>Date |



|   |            |        |   |       |
|---|------------|--------|---|-------|
| PT-10C Safeguards Logic Test (C.S.D. only)                | (P) or (F) | _____  | / | _____ |
|   |            | NSO/SF |   | Date  |
| PT-11 Diesel Generator Load Test-Locally Control Room     | (P) or (F) | _____  | / | _____ |
|   |            | NSO/SF |   | Date  |
| PT-12 Boric Acid Heat Trace Test                          | (P) or (F) | _____  | / | _____ |
|   |            | NSO/SF |   | Date  |
| PT-14 Inoperable Equipment Surv. Tests                    | (P) or (F) | _____  | / | _____ |
|   |            | NSO/SF |   | Date  |
| PT-15 Rx Containment Fan Cooler Tests                     | (P) or (F) | _____  | / | _____ |
|   |            | NSO/SF |   | Date  |
| PT-16 Boric Acid Transfer Pump Tests                      | (P) or (F) | _____  | / | _____ |
|   |            | NSO/SF |   | Date  |
| PT-17 Gas Decay Tank & Containment Purge Auto Valve Tests | (P) or (F) | _____  | / | _____ |
|   |            | NSO/SF |   | Date  |
| PT-20 Centrifugal Charging System Valve Tests             | (P) or (F) | _____  | / | _____ |
|   |            | NSO/SF |   | Date  |
| PT-21 R.C.S. Leak Rate Test, Manually                     | (P) or (F) | _____  | / | _____ |
|   |            | NSO/SF |   | Date  |
| PT-24 Unit to System Aux. Transformer Auto Feed Transfer  | (P) or (F) | _____  | / | _____ |
|   |            | NSO/SF |   | Date  |
| PT-101 Turbine Protective Device Tests                    | (P) or (F) | _____  | / | _____ |
|   |            | NSO/SF |   | Date  |
| PT-102 Intercept & Reheat Stop Valve Test                 | (P) Or (F) | _____  | / | _____ |
|   |            | NSO/SF |   | Date  |
| PT-103 Turbine Stop & Gov. Valve Tests                    | (P) or (F) | _____  | / | _____ |
|   |            | NSO/SF |   | Date  |
| PT-105 Jumper/Lifted Lead Verification                    | (P) or (F) | _____  | / | _____ |
|   |            | NSO/SF |   | Date  |
| PT-106 Key Audit  | (P) or (F) | _____  | / | _____ |
|   |            | NSO/SF |   | Date  |
| PT-201 Fire Protection Pump Tests                         | (P) or (F) | _____  | / | _____ |
|   |            | NSO/SF |   | Date  |

26. Manually control Steam Generator level while operation at > 80% power.  
(P) or (F) \_\_\_\_\_/\_\_\_\_\_  
NSO/SF Date
27. Shift steam Generator Level Control system from manual to automatic during start-up.  
(P) or (F) \_\_\_\_\_/\_\_\_\_\_  
NSO/SF Date
28. Shift Steam Generator Level Control system from manual to automatic while operation at > 80% power.  
(P) or (F) \_\_\_\_\_/\_\_\_\_\_  
NSO/SF Date
29. Control Auxiliary Feedwater flow to Steam Generator during start-up, shutdown or trip recovery.  
(P) or (F) \_\_\_\_\_/\_\_\_\_\_  
NSO/SF Date
30. Adjust the megavar loading on the main generator using appropriate curves.,  
(P) or (F) \_\_\_\_\_/\_\_\_\_\_  
NSO/SF Date
31. Operate the P-2500 computer console:
- |                      |            |             |      |
|----------------------|------------|-------------|------|
| Digital Display      | (P) or (F) | _____/_____ | Date |
| Add/Remove from Scan | (P) or (F) | _____/_____ | Date |
| Digital Trend        | (P) or (F) | _____/_____ | Date |
| Analog Trend         | (P) or (F) | _____/_____ | Date |
32. Adjust Accumulator level:
- a) Raise level with RCS pressure > 1600 psi.  
(P) or (F) \_\_\_\_\_/\_\_\_\_\_  
NSO/SF Date
- b) Raise level with RCS pressure < 1600 psi.  
(P) or (F) \_\_\_\_\_/\_\_\_\_\_  
NSO/SF Date
33. Adjust Accumulator nitrogen pressure.  
(P) or (F) \_\_\_\_\_/\_\_\_\_\_  
NSO/SF Date
34. Control  $\Delta$  I during steady state conditions.  
(P) or (F) \_\_\_\_\_/\_\_\_\_\_  
NSO/SF Date

35. Discuss control of A I following a power change and the procedure for dampening Axial Xenon Oscillations.  
(P) or (F) \_\_\_\_\_/\_\_\_\_\_  
NSO/SF Date
36. Complete a Containment Purge & Vent form.  
(P) or (F) \_\_\_\_\_/\_\_\_\_\_  
NSO/SF Date
37. Complete a Liquid Radwaste Discharge form.  
(P) or (F) \_\_\_\_\_/\_\_\_\_\_  
NSO/SF Date
38. Demonstrate familiarity with curves and graphs associated with the Radiation Monitor system.  
(P) or (F) \_\_\_\_\_/\_\_\_\_\_  
NSO/SF Date
39. Source check and operate the following radiation detection instruments:
- |                                 |     |        |   |       |      |
|---------------------------------|-----|--------|---|-------|------|
| RO-1 Rad. Owl                   | (P) | _____  | / | _____ | Date |
|                                 |     | NSO/SF |   |       |      |
| PRM-4 Alpha Survey              | (P) | _____  | / | _____ | Date |
|                                 |     | NSO/SF |   |       |      |
| PRN-4 Neutron Survey            | (P) | _____  | / | _____ | Date |
|                                 |     | NSO/SF |   |       |      |
| Teletector, Hi-Range Beta/Gamma | (P) | _____  | / | _____ | Date |
|                                 |     | NSO/SF |   |       |      |
40. Discuss the significance of changes in VCT and/or PRT level(s) when operating at steady state.  
\_\_\_\_\_/\_\_\_\_\_  
NSO/SF Date
41. Demonstrate familiarity with the location, operation and/or function of the following Control Room equipment:
- |                                   |            |        |   |       |      |
|-----------------------------------|------------|--------|---|-------|------|
| On-Site Communications Equipment  | (P) or (F) | _____  | / | _____ | Date |
|                                   |            | NSO/SF |   |       |      |
| Off-Site Communications Equipment | (P) or (F) | _____  | / | _____ | Date |
|                                   |            | NSO/SF |   |       |      |
| Emergency Equipment               | (P) or (F) | _____  | / | _____ | Date |
|                                   |            | NSO/SF |   |       |      |
| Fire & Evacuation Alarms          | (P) or (F) | _____  | / | _____ | Date |
|                                   |            | NSO/SF |   |       |      |
| Emergency Keys                    | (P) or (F) | _____  | / | _____ | Date |
|                                   |            | NSO/SF |   |       |      |
| Loose Parts Monitor               | (P) or (F) | _____  | / | _____ | Date |
|                                   |            | NSO/SF |   |       |      |

42. Shift source of Aux. Steam from unit to unit or to Aux. Boiler.  
(P) or (F) \_\_\_\_\_/\_\_\_\_\_  
NSO/SF Date
43. Discuss your responsibilities under the GSEP.  
\_\_\_\_\_/\_\_\_\_\_  
NSO/SF Date
44. Operate 345 KV OCB's from the General Services panel and  
coordinate operations with LD.  
(P) or (F) \_\_\_\_\_/\_\_\_\_\_  
NSO/SF Date



SHIFT SUPERVISOR HOT PARTICIPATION  
JOB QUALIFICATION CHECKLIST

1. Discuss the responsibilities of the S.E. in the station organization (ZAP 1-51-1).  
SE \_\_\_\_\_ / Date
2. Discuss the responsibilities of the S.F. in the station organization (ZAP 1-51-1).  
SF \_\_\_\_\_ / Date
3. Discuss the responsibilities of the SCRE/STA in the station organization (ZAP 1-51-1).  
SCRE \_\_\_\_\_ / Date
4. Discuss the requirements for the admission and control of Westinghouse trainees in the plant (ZAP-01).  
SE \_\_\_\_\_ / Date
5. Participate in a fire drill as Fire Chief (ZAP 02)  
(P) or (F) \_\_\_\_\_ / Date  
SF
6. Process a Work Request (ZAP 3-51-1).  
(P) or (F) \_\_\_\_\_ / Date  
SE/SF
7. Implement the procedure governing the use of temporary jumper cables, the lifting of terminated wires, the bypassing of alarms, or the installation of mechanical blocks or bypasses (ZAP 3-51-4)  
(P) or (F) \_\_\_\_\_ / Date  
SE/SF
8. Prepare a non-routine valve lineup. (ZAP 3-51-4B)  
(P) or (F) \_\_\_\_\_ / Date  
SE/SF

9. Perform the Annunciator Alarm Review (ZAP 3-51-7)  
(P) or (F) \_\_\_\_\_ / \_\_\_\_\_  
SCRE Date
10. Process a Station Procedure Change Request (ZAP 5-51-4).  
(P) or (F) \_\_\_\_\_ / \_\_\_\_\_  
SE/SF Date
11. Discuss the requirements for a confined space entry  
(ZAP 5-51-6).  
\_\_\_\_\_ / \_\_\_\_\_  
SE/SF Date
12. Participate in a containment entry (ZAP 5-51-7).  
(P) \_\_\_\_\_ / \_\_\_\_\_  
SF Date
13. Discuss access requirements for the control room (ZAP 5-51-8).  
\_\_\_\_\_ / \_\_\_\_\_  
SCRE Date
14. Perform the duties of SE during the discharge of liquid  
radioactive waste to the lake (ZAP 5-51-9).  
(P) or (F) \_\_\_\_\_ / \_\_\_\_\_  
SE Date
15. Discuss the requirements for authorizing an entry into a high  
radiation area (ZAP 5-51-15).  
(P) or (F) \_\_\_\_\_ / \_\_\_\_\_  
SE/SCRE/SF Date
16. Discuss the requirements for authorizing an Auxiliary  
Electrical Room entry (ZAP 5-51-17).  
(P) or (F) \_\_\_\_\_ / \_\_\_\_\_  
SF/SE Date
17. Accompany the Shift Foreman on each shift (ZAP 10-52-1).  
(P) Day \_\_\_\_\_ / \_\_\_\_\_  
SF Date  
(P) Afternoon \_\_\_\_\_ / \_\_\_\_\_  
SF Date  
(P) Mids \_\_\_\_\_ / \_\_\_\_\_  
SF Date

18. Accompany the SE on each shift (ZAP 10-52-1).  
 (P) Day SE /        Date         
 (P) Afternoon        /        Date         
 (P) Mids SE /        Date
19. Conduct a review of the SE/SF log book (ZAP 10-52-2).  
 (P) or (F) SF/SE /        Date
20. Participate in a shift turnover (ZAP 10-52-3).  
 (P) SE /        Date         
 (P) SF /        Date         
 (P) SCRE /        Date
21. Verify proper shift manning levels (ZAP 10-52-3).  
 (P) SE/SF /        Date
22. Verify proper control room manning levels (ZAP 10-52-3).  
 (P) SCRE /        Date
23. Review the RCS mass balance (ZAP 10-52-4).  
 (P) or (F) SE /        Date
24. Complete a lubrication report form (ZAP 10-52-9).  
 (P) or (F) SE /        Date
25. Discuss actions taken when Category I equipment exceeds vibration specifications (ZAP 10-52-10).  
 (P) SE/SF /        Date
26. Perform the duties of the SE for receiving new fuel on site. (ZAP 13-51-1).  
 (P) or (F) SE /        Date

27. Discuss the role of the SE in the preparation and shipment of radioactive waste offsite (ZAP 13-52-8).  
(P) or (F) \_\_\_\_\_/\_\_\_\_\_  
SE Date
28. Participate in the inspection, tagging out, testing, and return to service of plant equipment (ZAP 14-51-2).  
(P) or (F) \_\_\_\_\_/\_\_\_\_\_  
SE/SCRE/SF Date
29. Determination of operability requirement for Tech Spec Related Equipment.  
(P) or (F) \_\_\_\_\_/\_\_\_\_\_  
SE/SF/SCRE Date
30. Determination of Tech Spec compliance prior to changes in operational modes.  
(P) or (F) \_\_\_\_\_/\_\_\_\_\_  
SCRE Date
31. Trouble shoot various system malfunctions.\*  
\_\_\_\_\_(P) or (F) \_\_\_\_\_/\_\_\_\_\_  
SCRE Date  
\_\_\_\_\_(P) or (F) \_\_\_\_\_/\_\_\_\_\_  
SCRE Date  
\_\_\_\_\_(P) or (F) \_\_\_\_\_/\_\_\_\_\_  
SCRE Date
- \* List those systems on which the trainee participated.
32. Coordinate tests performed by station personnel.  
\_\_\_\_\_(P) or (F) \_\_\_\_\_/\_\_\_\_\_  
SCRE Date
33. Coordinate power changes with the Load Dispatcher.  
\_\_\_\_\_(P) or (F) \_\_\_\_\_/\_\_\_\_\_  
SE/SCRE Date



34. Evaluate power distribution during and after power level changes.

\_\_\_\_\_ (P) or (F) \_\_\_\_\_ / \_\_\_\_\_  
SCORE Date

35. Perform trend analysis of various parameters.\*

\_\_\_\_\_ / \_\_\_\_\_  
SCORE Date

\_\_\_\_\_ / \_\_\_\_\_  
SCORE Date

\_\_\_\_\_ / \_\_\_\_\_  
SCORE Date

\* List parameters which trainee has trended.

BRAIDWOOD NUCLEAR STATION  
HOT PARTICIPATION EXPERIENCE RECORD

\_\_\_\_\_ HAS SUCCESSFULLY COMPLETED  
Trainees Name

THE BRAIDWOOD NUCLEAR STATION HOT PARTICIPATION PROGRAM WHICH  
INCLUDES THE FOLLOWING REQUIREMENTS:

1. 6 MONTHS HOT PARTICIPATION AT ZION STATION.
2. 6 WEEKS OPERATION ABOVE 20% POWER.
3. STARTUP FROM SUBCRITICAL TO 20% POWER.
4. SHUTDOWN FROM 20% POWER TO COLD SHUTDOWN.

\_\_\_\_\_  
TRAINING SUPERVISOR, BRAIDWOOD STATION

\_\_\_\_\_  
ASS'T SUPERINTENDENT OF OPERATIONS  
BRAIDWOOD STATION

BRAIDWOOD NUCLEAR STATION  
SENIOR REACTOR OPERATOR  
EIGHT WEEK  
HOT PARTICIPATION PROCEDURE

A. STATEMENT OF APPLICABILITY

The purpose of this procedure is to describe the steps necessary for the successful completion of the Braidwood Nuclear Generating Stations' Senior Reactor Operator Eight Week Hot Participation Program. When this program has been completed the participant will have gained 8 weeks of Hot Participation Experience at a plant similar to Braidwood. During this period, the SRO trainee will be involved in the review and discussion leading to decisions relative to operating a nuclear power plant.

B. REFERENCES

1. J. H. Miller's presentation to the NRC Commissioners, "Industry Evaluation of Operating Shift Experience Requirements", February 24, 1984.
2. INPO Guideline 83-022, June 1983, PWR Control Room Operator, Senior Control Room Operator, and Shift Supervisor Qualification.
3. Nuclear Station Directive, A09, Conduct of Operations.
4. Zion Administrative Procedure 2-52-1, Station Training Administrative Program.

C. PREREQUISITES

Individuals shall successfully complete an SRO Certification Program on a similar plant before beginning the Hot Participation Program.

D. MAIN BODY

1. Complete the SRO Hot Participation Training Resume (Attachment A) as follows:

- a. The trainee, or a member of the Braidwood Station Training Department shall complete Section A (General Information) as follows:
  - 1) Name: Fill in name of trainee.
  - 2) CECO Service Date: Fill in trainee's Company Service Date.
- b. The trainee, or a member of the Braidwood Station Training Department shall complete Section B (Education) as follows:
  - 1) List the formal training completed by the trainee at accredited colleges and/or universities. Indicate Major/Minor, date of graduation, and the school which issued the diploma.
- c. A member of the Braidwood Station Training Department shall complete Section C (Commonwealth Edison Training Courses) as follows:
  - 1) Senior Reactor Operator/Reactor Operator Training Program:
    - a) Indicate location and date of certification.
    - b) If licensed, indicate Unit on which licensed and date of license.
  - 2) Other Technical Courses:
    - a) Indicate course name, location and date of completion.
  - 3) CEC Co Management Courses:
    - a) Indicate course name, and date of completion.
2. The trainee should read all required reading items listed on the SRO Hot Participation Required Reading Form (Attachment B) before going on shift at Zion.
3. After completion of each required reading item, the trainee shall document that the required reading is complete by signing his/her name in the space provided on Attachment B.
4. The Job Qualification Checklists (Attachments C and D) contain those tasks which shall be completed by the trainee while on shift at Zion Station.



a. General Instruction

Each task description is followed by a (P) or an (F). Those task descriptions followed by a (P) must be actually performed or observed by the trainee while on shift. The trainee is further required to demonstrate adequate knowledge relative to the performance of the evolution. The task descriptions followed by an (F), may be fulfilled by demonstrating adequate familiarity through simulation or discussion with designated on shift personnel. The preferred method of fulfilling a task is by performance (P). The option of demonstrating familiarity (F) should be used only when a perform (P) is not possible or practical.

The Job Qualification Checklist Addendum Log will be completed by the trainee listing those activities which are not specifically listed on the Job Qualification Checklist.

b. Checklist Instructions

There are 2 Hot Participation Job Qualification Checklists:

1) Reactor Operator Hot Participation Job Qualification Checklist:

The objective of this checklist is to directly involve the trainee in day to day control room activities, surveillances, periodic tests, and various plant evolutions. Items in which the trainee participates that are not listed on the Qualification Checklist should be documented on the Job Qualification Checklist Addendum Log.

2) Shift Supervisor Hot Participation Job Qualification Checklist:

The objective of this checklist is to directly involve the trainee in the review and discussion leading to decisions relative to operating a nuclear power plant. The trainee is to complete all items on the Shift Supervisor Hot Participation Job Qualification Checklist and to document all additional items on the Job Qualification Checklist Addendum Log.

Reactor Operator Candidates shall complete the Reactor Operator Hot Participation Job Qualification Checklist as a minimum. Shift Supervisors shall complete both checklists.

5. The Braidwood Station Training Supervisor and the Ass't Superintendent of Operations shall sign the Braidwood Nuclear Station Hot Participation Experience Record (Attachment F) after verifying the trainee has successfully completed the Hot Participation Program requirements.

## Hot Participation Training Resume

## A. General Information

1. Name: \_\_\_\_\_

2. CeCo Service Date: \_\_\_\_\_

## B. Education

|          | <u>Major/Minor Fields</u> | <u>Date</u> | <u>School</u> |
|----------|---------------------------|-------------|---------------|
| 1. B.S.  | _____                     | _____       | _____         |
| 2. M.S.  | _____                     | _____       | _____         |
| 3. PhD.  | _____                     | _____       | _____         |
| 4. Other | _____                     | _____       | _____         |

## C. Commonwealth Edison Training Programs

|  |   |   |
|--|---|---|
| 1. Senior Reactor<br>Operator Training Program | _____                                     | _____   |
|  | <u>Location/Date<br/>of Certification</u> | <u>Unit on Which<br/>Licensed/Date of<br/>License</u> |

## 2. Other Technical Courses

| <u>Title of Program</u> | <u>Location</u> | <u>Date of Completion</u> |
|-------------------------|-----------------|---------------------------|
| _____                   | _____           | _____                     |
| _____                   | _____           | _____                     |
| _____                   | _____           | _____                     |
| _____                   | _____           | _____                     |
| _____                   | _____           | _____                     |
| _____                   | _____           | _____                     |
| _____                   | _____           | _____                     |
| _____                   | _____           | _____                     |
| _____                   | _____           | _____                     |
| _____                   | _____           | _____                     |
| _____                   | _____           | _____                     |

3. CECo Management Courses

A. Communication and Motivation (SAI)

\_\_\_\_\_  
Date

B. Rational Situation Management (KT)

\_\_\_\_\_  
Date

C. Others

\_\_\_\_\_  
Date

\_\_\_\_\_  
Date

\_\_\_\_\_  
Date



## Hot Participation Required Reading

The trainee shall read the following documents:

Trainee Signature/Date

A. ZION ADMINISTRATIVE PROCEDURES

- |                 |  |       |
|-----------------|--|-------|
| 1. ZAP 0        | Conduct of Operation   | _____ |
| 2. ZAP 01       | Admitting and Control of<br>Westinghouse Trainees  | _____ |
| 3. ZAP 02       | Station Fire Fighting Forces   | _____ |
| 4. ZAP 02A      | Fire Protection Surveillance<br>Procedure  | _____ |
| 5. ZAP 02B      | Control of Flammable and Combustible<br>Liquids  | _____ |
| 6. ZAP 0-3      | Press Releases   | _____ |
| 7. ZAP 1-51-1   | Station Organization   | _____ |
| 8. ZAP 2-52-1   | Station Training Program   | _____ |
| 9. ZAP 2-52-3   | Operating Experience Feedback  | _____ |
| 10. ZAP 2-54-1  | On-Site Station Review   | _____ |
| 11. ZAP 2-54-2  | Plant Nuclear Safety Review<br>Committee   | _____ |
| 12. ZAP 2-54-3  | Emergency Operating Procedure<br>Review Committee  | _____ |
| 13. ZAP 3-51-1  | Origination and Routing of Work<br>Requests  | _____ |
| 14. ZAP 3-51-18 | Plant Modification Program   | _____ |
| 15. ZAP 2-51-2  | Non-Production Plant Work Orders   | _____ |
| 16. ZAP 3-51-4  | Procedure Governing the Use of<br>Temporary Jumper Cables, the Lifting<br>of Terminated Wires, The Bypassing<br>of Alarms, or The Installation Of<br>Mechanical Blocks or Bypasses | _____ |

|                 |   | <u>Trainee Signature/Date</u> |
|-----------------|---|-------------------------------|
| 17. ZAP 3-51-4B | Procedure for Non-Routine Valve Line-Ups  | _____                         |
| 18. ZAP 3-51-5  | Field Change Requests   | _____                         |
| 19. ZAP 3-51-6  | Evaluation of Component Parts   | _____                         |
| 20. ZAP 3-51-7  | Annunciator Alarm Review  | _____                         |
| 21. ZAP 3-52-1  | Change of Instrument Setpoint/Scaling   | _____                         |
| 22. ZAP 3-52-2  | OAD Periodic Relay Testing and Instrument Calibration Procedure Reportability to Zion Station | _____                         |
| 23. ZAP 3-52-3  | Zion Scaling Procedure  | _____                         |
| 24. ZAP 3-52-4  | Change of Protective Relay Setpoint   | _____                         |
| 25. ZAP 4-51-1  | Establishing Quality Requirements for Requests for Purchase and Requisition Cards             | _____                         |
| 26. ZAP 5-51-2  | Guidelines for an ALARA Review  | _____                         |
| 27. ZAP 5-51-3  | Procedure Periodic Review   | _____                         |
| 28. ZAP 5-51-4  | Procedure Control and Approval  | _____                         |
| 29. ZAP 5-51-5  | Procedure Content and Format  | _____                         |
| 30. ZAP 5-51-6  | Confined Space Entry  | _____                         |
| 31. ZAP 5-51-7  | Containment Access Control  | _____                         |
| 32. ZAP 5-51-8  | Access Control to the Control Room  | _____                         |
| 33. ZAP 5-51-9  | Liquid Waste Management   | _____                         |
| 34. ZAP 5-51-15 | High Radiation Area Access Control  | _____                         |
| 35. ZAP 5-51-16 | Reactor Cavity (Incore Shaft) Access Control  | _____                         |
| 36. ZAP 5-51-17 | Entry and Exit to Auxiliary Electrical Room   | _____                         |

|                  |   | <u>Trainee Signature/Date</u> |
|------------------|---|-------------------------------|
| 37. ZAP 5-51-18  | Personnel Termination Procedure   | _____                         |
| 38. ZAP 5-51-19  | Personnel Qualifications  | _____                         |
| 39. ZAP 6-52-1   | Zion Station Drawing Change Request Program                                       | _____                         |
| 40. ZAP 6-52-2   | Zion Station Document Control   | _____                         |
| 41. ZAP 6-52-3   | Zion Station Mail Receipt Control   | _____                         |
| 42. ZAP 6-52-4   | Zion Station General Office Master File Control                                   | _____                         |
| 43. ZAP 10-52-1  | Inspection Plan for Operations  | _____                         |
| 44. ZAP 10-52-2  | Operating Log Books   | _____                         |
| 45. ZAP 10-52-3  | Shift Manning, Relief, and Turnover   | _____                         |
| 46. ZAP 10-52-4  | Leak Reduction and Control Program  | _____                         |
| 47. ZAP 10-52-5  | Housekeeping  | _____                         |
| 48. ZAP 10-52-9  | Station Lubrication Report  | _____                         |
| 49. ZAP 10-52-10 | Vibration Monitoring/Analysis Program   | _____                         |
| 50. ZAP 10-53-1  | Inspection Plan - Surveillance  | _____                         |
| 51. ZAP 13-51-1  | Responsibilities, Movements, and Reporting Related to Safeguarding Nuclear Fuel   | _____                         |
| 52. ZAP 13-52-1  | Receiving, Handling, Storage, Packaging, and Shipping of Items in the Storeroom   | _____                         |
| 53. ZAP 13-52-2  | Preventive Maintenance & Limited Shelf Life of Safety-Related and ASME Code Items | _____                         |
| 54. ZAP 13-52-3  | Receiving and Storing Chemicals   | _____                         |
| 55. ZAP 13-52-4  | Handling, Storage and Control of Welding Materials                                | _____                         |

Trainee Signature/Date

56. ZAP 13-52-8 Preparation and Shipment of Radioactive  
Material \_\_\_\_\_

57. ZAP 14-51-2 Inspection, Test and Operating Status  
Tagging of Equipment \_\_\_\_\_

58. ZAP 16-51-1 Zion Station Action Item Record  
Program \_\_\_\_\_

B. ZION STATION RADIATION PROCEDURES

1. RP 1190-1 Zion radiation protection general  
procedures \_\_\_\_\_

2. RP 1210-3 Personnel neutron monitoring \_\_\_\_\_

3. RP 1210-4 Dose calculations, time limits  
and timekeeping \_\_\_\_\_

4. RP 1230-1 Lost film badge procedure \_\_\_\_\_

5. RP 1240 Survey instrument calibration  
Series (1-22) and use \_\_\_\_\_

6. RP 1280-1 Radiation surveys \_\_\_\_\_

7. RP 1280-2 Radiation level area surveys \_\_\_\_\_

8. RP 1310 Use of respiratory protective  
Series (1-12) equipment \_\_\_\_\_

9. RP 1320-1 Personnel injury in controlled  
area \_\_\_\_\_

10. RP 1330-1 Working in radioiodine & tritium  
atmosphere \_\_\_\_\_

11. RP 1340-1 Personnel contamination procedure \_\_\_\_\_

12. RP 1350-8 Radiation monitor out of service  
and return to service procedure \_\_\_\_\_

13. RP 1350-20-23 Testing of breathing & working  
environments \_\_\_\_\_



|                 |  | <u>Trainee Signature/Date</u> |
|-----------------|--|-------------------------------|
| 14. RP 1350-37  | High Radiation Monitor Alarm                               | _____                         |
| 15. RP 1360-4   | Testing of breathing & working environments                | _____                         |
| 16. RP 1410-1   | Protective clothing  | _____                         |
| 17. RP 1410-2   | Washing protective clothing                                | _____                         |
| 18. RP 1430-1   | Unconditional release of materials                         | _____                         |
| 19. RP 1470-3   | Area and material decon                                    | _____                         |
| 20. RP 1470-4   | Personnel decontamination                                  | _____                         |
| 21. RP 1480-2   | Contamination surveys                                      | _____                         |
| 22. RP 1490-1   | Contamination control points                               | _____                         |
| 23. RP 1520-1&2 | Radioactive waste shipments                                | _____                         |
| 24. RP 1610-5   | Containment entry procedure                                | _____                         |
| 25. RP 1610-6   | Gas leaks in Aux. Building or Containment                  | _____                         |
| 26. RP 1610-8   | Reactor coolant leak detection                             | _____                         |
| 27. RP 1740-1   | Monitoring of high activity gas release during an accident | _____                         |
| 28. RP 1740-2   | Setting up the emergency command center                    | _____                         |
| 29. RP 1740-5   | Emergency equipment storage and location                   | _____                         |
| 30. RP 1740-6   | Radioactive liquid spills                                  | _____                         |

Trainee Signature/Date

- C. 10CFR20     STANDARDS FOR PROTECTION AGAINST RADIATION \_\_\_\_\_
- D. 10CFR50     LICENSING OF PRODUCTION AND UTILIZATION FACILITIES  
With Emphasis of Appendicies A,B,  
E,H,I,J,K and R \_\_\_\_\_
- E. 10CFR55     OPERATOR LICENSES  
Paragrapahs 55.1 thru 55.6, 55.20  
thru 55.23, 55.30 thru 55.50 \_\_\_\_\_
- F. 10CFR100    REACTOR SITE CRITERIA \_\_\_\_\_
- G. GENERATING STATION EMERGENCY PLAN
1. Generic GSEP \_\_\_\_\_
2. EPIPs \_\_\_\_\_
- H. ZION STATION CHEMISTRY PROCEDURES
1. ZCP-200        Primary System Sampling Procedure \_\_\_\_\_
2. ZCP-300        Zion Station Liquid Releases \_\_\_\_\_
3. ZCP-304        Containment Venting & Purging Analysis \_\_\_\_\_
4. ZCP-306        Continuous Gaseous Release Calculations \_\_\_\_\_
- I. PLANT MODIFICATIONS
1. Review recent modifications and setpoint changes. \_\_\_\_\_
- J. OPERATING EXPERIENCE REPORTS (OPEX)
1. Read major operating experience reports from other plants. \_\_\_\_\_
2. Read major and recent (last year) Zion LER's. \_\_\_\_\_
- K. INSTRUMENT FAILURE RESPONSE MANUAL \_\_\_\_\_
1. Review plant response to instrument failures. \_\_\_\_\_

REACTOR OPERATOR HOT PARTICIPATION  
JOB QUALIFICATION CHECKLIST

NOTE

The trainee shall participate in the control room during the following evolutions.

1. 6 weeks operation above 20% Reactor Power.

\_\_\_\_\_/\_\_\_\_\_  
SF Date

2. A refueling outage or a plant startup following an outage.

\_\_\_\_\_/\_\_\_\_\_  
SF Date

NOTE

The trainee should perform or demonstrate familiarity with the following duties of a control room operator under the direct supervision and guidance of a qualified control room operator.

3. Reactor Startup:

- a) Cold Shutdown to Hot Shutdown.

(P) \_\_\_\_/\_\_\_\_  
NSO/SF Date

- b) Hot Shutdown to Hot Standby.

\_\_\_\_/\_\_\_\_  
NSO/SF Date

- c) Subcritical to Critical.

(P) \_\_\_\_/\_\_\_\_  
NSO/SF Date

- d) Critical to 2% power.

(P) \_\_\_\_/\_\_\_\_  
NSO/SF Date

- e) Reactor power increase from 2% power to 20% power.

(P) \_\_\_\_/\_\_\_\_  
NSO/SF Date

4. Reactor Shutdown:

- a) Reactor power decrease from 20% power to Hot Standby.

(P) \_\_\_\_/\_\_\_\_  
NSO/SF Date

- b) Hot Standby to Hot Shutdown.

(P) \_\_\_\_/\_\_\_\_  
NSO/SF Date

- c) Hot Shutdown to Cold Shutdown.

(P) \_\_\_\_/\_\_\_\_  
NSO/SF Date

Attachment C

5. Manual control of steam generator levels during plant start-up and/or shutdown.

(P) \_\_\_\_\_/\_\_\_\_\_  
NSO/SF Date

6. Boration during power operation.

(P) \_\_\_\_\_/\_\_\_\_\_  
NSO/SF Date

7. Dilution during power operation.

(P) \_\_\_\_\_/\_\_\_\_\_  
NSO/SF Date

8. Reactor power changes of 10% or greater when rod control is in manual.

(P) \_\_\_\_\_/\_\_\_\_\_  
NSO/SF Date

9. Operation of turbine controls during turbine start-up.

(P) \_\_\_\_\_/\_\_\_\_\_  
NSO/SF Date

10. Synchronization of the main generator with the grid.

(P) \_\_\_\_\_/\_\_\_\_\_  
NSO/SF Date

11. Control room operations during 3 shifts of refueling.

(P) \_\_\_\_\_/\_\_\_\_\_  
NSO/SF Date

12. Residual heat removal system startup and shutdown.

(P) \_\_\_\_\_/\_\_\_\_\_  
NSO/SF Date

13. Control of primary pressure under solid water conditions.

(P) \_\_\_\_\_/\_\_\_\_\_  
NSO/SF Date



14. Incore instrumentation system operation.

(P) \_\_\_\_\_ / \_\_\_\_\_  
NSO/SF Date

15. Large change in Reactor Power.

(P) \_\_\_\_\_ / \_\_\_\_\_  
NSO/SF Date

16. Large rate of change in Reactor Power (Rate of change greater than required for normal operations i.e. abnormal condition) --(optional).

(P) \_\_\_\_\_ / \_\_\_\_\_  
NSO/SF Date

17. Participate in a fire drill as a Control Room Operator.  
(ZAP -02)

(P) or (F) \_\_\_\_\_ / \_\_\_\_\_  
NSO/SF Date

18. Discuss the NSO responsibilities in the Station Organization.  
(ZAP 1-51-1)

\_\_\_\_\_ / \_\_\_\_\_  
NSO/SF Date

19. Participate in a shift turnover (ZAP 10-52-3)

(P) \_\_\_\_\_ / \_\_\_\_\_  
Center Desk Date

(P) \_\_\_\_\_ / \_\_\_\_\_  
Unit Operator Date

20. Calculate an estimated critical condition.

(P) or (F) \_\_\_\_\_ / \_\_\_\_\_  
NSO/SF Date

21. Perform or assist with the following surveillance tests:  
PT-0 Unit Shift Surveillance  
Appx B/B-1, Shutdown Margin Verification (Modes 2, 3, 4, 5, & 6).

(P) Shift 1 \_\_\_\_\_ / \_\_\_\_\_  
NSO/SF Date

(P) Shift 2 \_\_\_\_\_ / \_\_\_\_\_  
NSO/SF Date

(P) Shift 3 \_\_\_\_\_ / \_\_\_\_\_  
NSO/SF Date

Attachment C

Appx D, Operating Surveillance Checksheet

(P) Shift 1 \_\_\_\_\_ / \_\_\_\_\_  
NSO/SF Date

(P) Shift 2 \_\_\_\_\_ / \_\_\_\_\_  
NSO/SF Date

(P) Shift 3 \_\_\_\_\_ / \_\_\_\_\_  
NSO/SF Date

Appx E, Operating Surveillance.

(P) Shift 1 \_\_\_\_\_ / \_\_\_\_\_  
NSO/SF Date

(P) Shift 2 \_\_\_\_\_ / \_\_\_\_\_  
NSO/SF Date

(P) Shift 3 \_\_\_\_\_ / \_\_\_\_\_  
NSO/SF Date

Appx F, Operating Surveillance Checksheet (Modes 3 & 4)

(P) Shift 1 \_\_\_\_\_ / \_\_\_\_\_  
NSO/SF Date

(P) Shift 2 \_\_\_\_\_ / \_\_\_\_\_  
NSO/SF Date

(P) Shift 3 \_\_\_\_\_ / \_\_\_\_\_  
NSO/SF Date

Appx G, Operating Surveillance Checksheet (Modes 1 & 2)

(P) Shift 1 \_\_\_\_\_ / \_\_\_\_\_  
NSO/SF Date

(P) Shift 2 \_\_\_\_\_ / \_\_\_\_\_  
NSO/SF Date

(P) Shift 3 \_\_\_\_\_ / \_\_\_\_\_  
NSO/SF Date

Attachment C

Appx H, Control Rod Alignment Checksheet (Modes 1 & 2)

(P) Shift 1 \_\_\_\_\_/\_\_\_\_\_  
NSO/SF Date

(P) Shift 2 \_\_\_\_\_/\_\_\_\_\_  
NSO/SF Date

(P) Shift 3 \_\_\_\_\_/\_\_\_\_\_  
NSO/SF Date

Appx I, Excore Detector Outputs and Quadrant Power Tilt Ratio  
(Mode 1 > 50%).

(P) Shift 1 \_\_\_\_\_/\_\_\_\_\_  
NSO/SF Date

(P) Shift 2 \_\_\_\_\_/\_\_\_\_\_  
NSO/SF Date

(P) Shift 3 \_\_\_\_\_/\_\_\_\_\_  
NSO/SF Date

Appx J-1, Normal and Reserve Off Site AC Power Availability.

(P) Shift 3 \_\_\_\_\_/\_\_\_\_\_  
NSO/SF Date

Appx J-2, Onsite AC & DC Power Availability.

(P) Shift 3 \_\_\_\_\_/\_\_\_\_\_  
NSO/ F Date

Appx K, Station Battery Daily Record

(P) Shift 2 \_\_\_\_\_/\_\_\_\_\_  
NSO/SF Date

Appx L, Reactor Protection Channel check & E.S.S.  
Instrumentation Channel Check (Modes 1, 2, 3, & 4).

(P) Shift 1 \_\_\_\_\_/\_\_\_\_\_  
NSO/SF Date

(P) Shift 2 \_\_\_\_\_/\_\_\_\_\_  
NSO/SF Date

(P) Shift 3 \_\_\_\_\_/\_\_\_\_\_  
NSO/SF Date

## Attachment C

Appx M, Calormetric

(P) Shift 2 \_\_\_\_\_ / \_\_\_\_\_  
NSO/SF Date

Appx N, Radiation Monitor Check

(P) Shift 1 \_\_\_\_\_ / \_\_\_\_\_  
NSO/SF Date

Appx P, Power History Log

(P) Shift 1 \_\_\_\_\_ / \_\_\_\_\_  
NSO/SF Date(P) Shift 2 \_\_\_\_\_ / \_\_\_\_\_  
NSO/SF Date(P) Shift 3 \_\_\_\_\_ / \_\_\_\_\_  
NSO/SF Date

PT-1 Rod Cluster Exercise

(P) or (F) \_\_\_\_\_ / \_\_\_\_\_  
NSO/SF Date

PT-2A Safety Injection Pump Tests

(P) or (F) \_\_\_\_\_ / \_\_\_\_\_  
NSO/SF Date

PT-2C ECCS Valve Interlock Test

(P) or (F) \_\_\_\_\_ / \_\_\_\_\_  
NSO/SF DatePT-2E Spurious Valve Actuation Group  
De-energization Check(P) or (F) \_\_\_\_\_ / \_\_\_\_\_  
NSO/SF Date

PT-2I Centrifugal Chg. Pump Tests

(P) or (F) \_\_\_\_\_ / \_\_\_\_\_  
NSO/SF Date

PT-2J RHR Pump Tests

(P) or (F) \_\_\_\_\_ / \_\_\_\_\_  
NSO/SF Date

PT-2R Penetration Press. Compressor Test

(P) or (F) \_\_\_\_\_ / \_\_\_\_\_  
NSO/SF Date



## Attachment C

|        |                                  |            |      |
|--------|----------------------------------|------------|------|
| PT-3B  | Isolation Valve Seal Water       |            |      |
|        | (P) or (F)                       | _____/____ | Date |
|        |                                  | NSO/SF     |      |
| PT-3C  | Penetration Pressurization Tests |            |      |
|        | (P) or (F)                       | _____/____ | Date |
|        |                                  | NSO/SF     |      |
| PT-3D  | MSIV Test                        |            |      |
|        | (P) or (F)                       | _____/____ | Date |
|        |                                  | NSO/SF     |      |
| PT-4A  | N.I.S. Functional Test S.R.      |            |      |
|        | (P) or (F)                       | _____/____ | Date |
|        |                                  | NSO/SF     |      |
| PT-4B  | N.I.S. Functional Test I.R.      |            |      |
|        | (P) or (F)                       | _____/____ | Date |
|        |                                  | NSO/SF     |      |
| PT-5   | Reactor Protection Logic         |            |      |
|        | (P) or (F)                       | _____/____ | Date |
|        |                                  | NSO/SF     |      |
| PT-5A  | Reactor Protection Logic         |            |      |
|        | (P) or (F)                       | _____/____ | Date |
|        |                                  | NSO/SF     |      |
| PT-5B  | Reactor Protection Logic         |            |      |
|        | (P) or (F)                       | _____/____ | Date |
|        |                                  | NSO/SF     |      |
| PT-6   | Containment Spray Pump Test      |            |      |
|        | (P) or (F)                       | _____/____ | Date |
|        |                                  | NSO/SF     |      |
| PT-7   | Aux. Feedwater Pump Test         |            |      |
|        | (P) or (F)                       | _____/____ | Date |
|        |                                  | NSO/SF     |      |
| PT-9   | Service Water Valve Tests        |            |      |
|        | (P) or (F)                       | _____/____ | Date |
|        |                                  | NSO/SF     |      |
| PT-10  | Safeguards Actuations Tests      |            |      |
|        | (P) or (F)                       | _____/____ | Date |
|        |                                  | NSO/SF     |      |
| PT-10A | Safeguards Logic Test            |            |      |
|        | (P) or (F)                       | _____/____ | Date |
|        |                                  | NSO/SF     |      |
| PT-10B | Safeguards Logic Test            |            |      |
|        | (P) or (F)                       | _____/____ | Date |
|        |                                  | NSO/SF     |      |

## Attachment C

|   |            |                       |               |
|---|------------|-----------------------|---------------|
| PT-10C Safeguards Logic Test (C.S.D. only)                | (P) or (F) | _____/_____<br>NSO/SF | _____<br>Date |
| PT-11 Diesel Generator Load Test-Locally Control Room     | (P) or (F) | _____/_____<br>NSO/SF | _____<br>Date |
| PT-12 Boric Acid Heat Trace Test                          | (P) or (F) | _____/_____<br>NSO/SF | _____<br>Date |
| PT-14 Inoperable Equipment Surv. Tests                    | (P) or (F) | _____/_____<br>NSO/SF | _____<br>Date |
| PT-15 Rx Containment Fan Cooler Tests                     | (P) or (F) | _____/_____<br>NSO/SF | _____<br>Date |
| PT-16 Boric Acid Transfer Pump Tests                      | (P) or (F) | _____/_____<br>NSO/SF | _____<br>Date |
| PT-17 Gas Decay Tank & Containment Purge Auto Valve Tests | (P) or (F) | _____/_____<br>NSO/SF | _____<br>Date |
| PT-20 Centrifugal Charging System Valve Tests             | (P) or (F) | _____/_____<br>NSO/SF | _____<br>Date |
| PT-21 R.C.S. Leak Rate Test, Manually                     | (P) or (F) | _____/_____<br>NSO/SF | _____<br>Date |
| PT-24 Unit to System Aux. Transformer Auto Feed Transfer  | (P) or (F) | _____/_____<br>NSO/SF | _____<br>Date |
| PT-101 Turbine Protective Device Tests                    | (P) or (F) | _____/_____<br>NSO/SF | _____<br>Date |
| PT-102 Intercept & Reheat Stop Valve Test                 | (P) Or (F) | _____/_____<br>NSO/SF | _____<br>Date |
| PT-103 Turbine Stop & Gov. Valve Tests                    | (P) or (F) | _____/_____<br>NSO/SF | _____<br>Date |
| PT-105 Jumper/Lifted Lead Verification                    | (P) or (F) | _____/_____<br>NSO/SF | _____<br>Date |
| PT-106 Key Audit  | (P) or (F) | _____/_____<br>NSO/SF | _____<br>Date |
| PT-201 Fire Protection Pump Tests                         | (P) or (F) | _____/_____<br>NSO/SF | _____<br>Date |

## Attachment C

26. Manually control Steam Generator level while operation at > 80% power.  
(P) or (F) \_\_\_\_\_ / \_\_\_\_\_  
NSO/SF Date
27. Shift steam Generator Level Control system from manual to automatic during start-up.  
(P) or (F) \_\_\_\_\_ / \_\_\_\_\_  
NSO/SF Date
28. Shift Steam Generator Level Control system from manual to automatic while operation at > 80% power.  
(P) or (F) \_\_\_\_\_ / \_\_\_\_\_  
NSO/SF Date
29. Control Auxiliary Feedwater flow to Steam Generator during start-up, shutdown or trip recovery.  
(P) or (F) \_\_\_\_\_ / \_\_\_\_\_  
NSO/SF Date
30. Adjust the megavar loading on the main generator using appropriate curves.,  
(P) or (F) \_\_\_\_\_ / \_\_\_\_\_  
NSO/SF Date
31. Operate the P-2500 computer console:
- |                      |            |               |        |      |
|----------------------|------------|---------------|--------|------|
| Digital Display      | (P) or (F) | _____ / _____ | NSO/SF | Date |
| Add/Remove from Scan | (P) or (F) | _____ / _____ | NSO/SF | Date |
| Digital Trend        | (P) or (F) | _____ / _____ | NSO/SF | Date |
| Analog Trend         | (P) or (F) | _____ / _____ | NSO/SF | Date |
32. Adjust Accumulator level:
- a) Raise level with RCS pressure > 1600 psi.  
(P) or (F) \_\_\_\_\_ / \_\_\_\_\_  
NSO/SF Date
- b) Raise level with RCS pressure < 1600 psi.  
(P) or (F) \_\_\_\_\_ / \_\_\_\_\_  
NSO/SF Date
33. Adjust Accumulator nitrogen pressure.  
(P) or (F) \_\_\_\_\_ / \_\_\_\_\_  
NSO/SF Date
34. Control Δ I during steady state conditions.  
(P) or (F) \_\_\_\_\_ / \_\_\_\_\_  
NSO/SF Date

## Attachment C

- |     |  |            |               |      |
|-----|--|------------|---------------|------|
| 35. | Discuss control of $\Delta I$ following a power change and the procedure for dampening Axial Xenon Oscillations. | (P) or (F) | _____ / _____ |      |
|     |  |            | NSO/SF        | Date |
| 36. | Complete a Containment Purge & Vent form.  | (P) or (F) | _____ / _____ |      |
|     |  |            | NSO/SF        | Date |
| 37. | Complete a Liquid Radwaste Discharge form.   | (P) or (F) | _____ / _____ |      |
|     |  |            | NSO/SF        | Date |
| 38. | Demonstrate familiarity with curves and graphs associated with the Radiation Monitor system.                     | (P) or (F) | _____ / _____ |      |
|     |  |            | NSO/SF        | Date |
| 39. | Source check and operate the following radiation detection instruments:  |            |               |      |
|     | RO-1 Rad. Owl  | (P)        | _____ / _____ |      |
|     |  |            | NSO/SF        | Date |
|     | PRM-4 Alpha Survey   | (P)        | _____ / _____ |      |
|     |  |            | NSO/SF        | Date |
|     | PRN-4 Neutron Survey   | (P)        | _____ / _____ |      |
|     |  |            | NSO/SF        | Date |
|     | Teletector, Hi-Range Beta/Gamma  | (P)        | _____ / _____ |      |
|     |  |            | NSO/SF        | Date |
| 40. | Discuss the significance of changes in VCT and/or PRT level(s) when operating at steady state.                   |            | _____ / _____ |      |
|     |  |            | NSO/SF        | Date |
| 41. | Demonstrate familiarity with the location, operation and/or function of the following Control Room equipment:    |            |               |      |
|     | On-Site Communications Equipment   | (P) or (F) | _____ / _____ |      |
|     |  |            | NSO/SF        | Date |
|     | Off-Site Communications Equipment  | (P) or (F) | _____ / _____ |      |
|     |  |            | NSO/SF        | Date |
|     | Emergency Equipment  | (P) or (F) | _____ / _____ |      |
|     |  |            | NSO/SF        | Date |
|     | Fire & Evacuation Alarms   | (P) or (F) | _____ / _____ |      |
|     |  |            | NSO/SF        | Date |
|     | Emergency Keys   | (P) or (F) | _____ / _____ |      |
|     |  |            | NSO/SF        | Date |
|     | Loose Parts Monitor  | (P) or (F) | _____ / _____ |      |
|     |  |            | NSO/SF        | Date |



Attachment C

42. Shift source of Aux. Steam from unit to unit or to Aux. Boiler.  
(P) or (F) \_\_\_\_\_ / \_\_\_\_\_  
NSO/SF Date
43. Discuss your responsibilities under the GSEP.  
\_\_\_\_\_ / \_\_\_\_\_  
NSO/SF Date
44. Operate 345 KV OCB's from the General Services panel and  
coordinate operations with LD.  
(P) or (F) \_\_\_\_\_ / \_\_\_\_\_  
NSO/SF Date

SHIFT SUPERVISOR HOT PARTICIPATION  
JOB QUALIFICATION CHECKLIST

1. Discuss the responsibilities of the S.E. in the station organization (ZAP 1-51-1).

\_\_\_\_\_/\_\_\_\_\_  
SE Date

2. Discuss the responsibilities of the S.F. in the station organization (ZAP 1-51-1).

\_\_\_\_\_/\_\_\_\_\_  
SF Date

3. Discuss the responsibilities of the SCRE/STA in the station organization (ZAP 1-51-1).

\_\_\_\_\_/\_\_\_\_\_  
SCRE Date

4. Prepare a non-routine valve lineup. (ZAP 3-51-4B)

(P) or (F) \_\_\_\_/\_\_\_\_\_  
SE/SF Date

5. Perform the Annunciator Alarm Review (ZAP 3-51-7)

(P) or (F) \_\_\_\_/\_\_\_\_\_  
SCRE Date

6. Discuss the requirements for a confined space entry (ZAP 5-51-6).

\_\_\_\_\_/\_\_\_\_\_  
SE/SF Date

7. Participate in a containment entry (ZAP 5-51-7).

(P) \_\_\_\_/\_\_\_\_\_  
SF Date

8. Discuss access requirements for the control room (ZAP 5-51-8).

\_\_\_\_\_/\_\_\_\_\_  
SCRE Date

Attachment D

9. Perform the duties of SE during the discharge of liquid radioactive waste to the lake (ZAP 5-51-9).

(P) or (F) \_\_\_\_\_ / \_\_\_\_\_  
SE Date

10. Discuss the requirements for authorizing an entry into a high radiation area (ZAP 5-51-15).

(P) or (F) \_\_\_\_\_ / \_\_\_\_\_  
SE/SCRE/SF Date

11. Discuss the requirements for authorizing an Auxiliary Electrical Room entry (ZAP 5-51-17).

(P) or (F) \_\_\_\_\_ / \_\_\_\_\_  
SF/SE Date

12. Accompany the Shift Foreman on each shift (ZAP 10-52-1).

(P) Day \_\_\_\_\_ / \_\_\_\_\_  
SF Date

(P) Afternoon \_\_\_\_\_ / \_\_\_\_\_  
SF Date

(P) Mids \_\_\_\_\_ / \_\_\_\_\_  
SF Date

13. Accompany the SE on each shift (ZAP 10-52-1).

(P) Day \_\_\_\_\_ / \_\_\_\_\_  
SE Date

(P) Afternoon \_\_\_\_\_ / \_\_\_\_\_  
SE Date

(P) Mids \_\_\_\_\_ / \_\_\_\_\_  
SE Date

14. Conduct a review of the SE/SF log book (ZAP 10-52-2).

(P) or (F) \_\_\_\_\_ / \_\_\_\_\_  
SF/SE Date

15. Participate in a shift turnover (ZAP 10-52-3).

(P) \_\_\_\_\_ / \_\_\_\_\_  
SE Date

(P) \_\_\_\_\_ / \_\_\_\_\_  
SF Date

(P) \_\_\_\_\_ / \_\_\_\_\_  
SCRE Date

16. Verify proper shift manning levels (ZAP 10-52-3).

(P) \_\_\_\_\_ / \_\_\_\_\_  
SE/SF Date

17. Verify proper control room manning levels (ZAP 10-52-3).

(P) \_\_\_\_\_ / \_\_\_\_\_  
SCRE Date

18. Review the RCS mass balance (ZAP 10-52-4).

(P) or (F) \_\_\_\_\_ / \_\_\_\_\_  
SE Date

19. Complete a lubrication report form (ZAP 10-52-9).

(P) or (F) \_\_\_\_\_ / \_\_\_\_\_  
SE Date

20. Discuss actions taken when Category I equipment exceeds vibration specifications (ZAP 10-52-10).

(P) \_\_\_\_\_ / \_\_\_\_\_  
SE/SF Date

21. Perform the duties of the SE for receiving new fuel on site.  
(ZAP 13-51-1).

(P) or (F) \_\_\_\_\_ / \_\_\_\_\_  
SE Date

22. Discuss the role of the SE in the preparation and shipment of radioactive waste offsite (ZAP 13-52-8).

(P) or (F) \_\_\_\_\_ / \_\_\_\_\_  
SE Date



23. Participate in the inspection, tagging out, testing, and return to service of plant equipment (ZAP 14-51-2).

(P) or (F) \_\_\_\_\_ / \_\_\_\_\_  
SE/SCRE/SF Date

24. Determination of operability requirement for Tech Spec Related Equipment.

(P) or (F) \_\_\_\_\_ / \_\_\_\_\_  
SE/SCRE/SF Date

25. Determination of Tech Spec compliance prior to changes in operational modes.

(P) or (F) \_\_\_\_\_ / \_\_\_\_\_  
SCRE Date

26. Trouble shoot various system malfunctions.\*

\_\_\_\_\_ (P) or (F) \_\_\_\_\_ / \_\_\_\_\_  
SCRE Date

\_\_\_\_\_ (P) or (F) \_\_\_\_\_ / \_\_\_\_\_  
SCRE Date

\_\_\_\_\_ (P) or (F) \_\_\_\_\_ / \_\_\_\_\_  
SCRE Date

\*List those systems on which the trainee participated.

27. Coordinate test performed by station personnel.

\_\_\_\_\_ (P) or (F) \_\_\_\_\_ / \_\_\_\_\_  
SCRE Date

28. Coordinate power changes with the Load Dispatcher.

\_\_\_\_\_ (P) or (F) \_\_\_\_\_ / \_\_\_\_\_  
SE/SCRE Date

29. Evaluate power distribution during and after power level changes.

\_\_\_\_\_ (P) or (F) \_\_\_\_\_ / \_\_\_\_\_  
SCRE Date

## 30. Perform trend analysis of various parameters.\*

|       |            |                      |               |
|-------|------------|----------------------|---------------|
| _____ | (P) or (F) | _____/_____<br>SCORE | _____<br>Date |
| _____ | (P) or (F) | _____/_____<br>SCORE | _____<br>Date |
| _____ | (P) or (F) | _____/_____<br>SCORE | _____<br>Date |

\*List parameters which trainee has trended.

\_\_\_\_\_  
Trainees Name HAS SUCCESSFULLY COMPLETED  
THE BRAIDWOOD NUCLEAR STATION 8 WEEK HOT PARTICIPATION PROGRAM WHICH  
INCLUDES THE FOLLOWING REQUIREMENTS:

1. 8 WEEKS ONSHIFT AT ZION STATION.
2. 6 WEEKS OPERATION ABOVE 20% POWER.
3. STARTUP FROM SUBCRITICAL TO 20 PERCENT POWER. \*
4. SHUTDOWN FROM 20 PERCENT POWER TO COLD SHUTDOWN. \*

\_\_\_\_\_  
TRAINING SUPERVISOR, BRAIDWOOD STATION

\_\_\_\_\_  
ASS'T SUPERINTENDENT OF OPERATING  
BRAIDWOOD STATION

\* Optional ITEMS - Circle those items which were completed during  
the course of the eight week Hot Participation Program.

## WEEK 1

| DAY 1                | DAY 2                                 | DAY 3  | DAY 4  | DAY 5  |
|----------------------|---------------------------------------|--|--|--|
|                      |                                       | Shift Turnover<br>Shift Muster<br>Upcoming<br>Evolutions   | Shift Turnover<br>Shift Muster<br>Upcoming<br>Evolutions   | Shift Turnover<br>Shift Muster<br>Upcoming<br>Evolutions                       |
|                      |                                       | SEMINAR<br>- ZAP 3-51-1<br>- ZAP 3-51-2<br>- ZAP 10-52-2<br>- ZAP 10-52-3<br>- ZAP 14-51-2<br>- ZAP 5-51-8 | SEMINAR<br>- RP 1740-5<br>- RP 1190-1<br>- RP 1210-3<br>- RP 1210-4<br>- RP 1210-3<br>- RP 1410-1  | SEMINAR<br>- Portable<br>Survey<br>Instrumenta-<br>tion                        |
| PLANT<br>ORIENTATION | PLANT TOUR                            |  |  | RO-1 Rad Owl<br>PRM-4 Alpha<br>Survey  |
| NGET                 | ORIENTATION                           |  | THEORY   | PRN-4 Neutron<br>Survey  |
| Mask Fit             | C/R OPERATIONS                        |  | Gas-Filled<br>Detectors  |  |
| Whole Body<br>Count  | - Board<br>Walkdown                   | WATCHSTANDING<br>and C/R   | WATCHSTANDING<br>and C/R   | Teletor<br>Hi Range<br>Beta/Gamma  |
| Film Badge           | - Control Room<br>Administra-<br>tion | OPERATIONS<br>Initiate Work<br>Requests and<br>Equip Tagouts   | OPERATIONS<br>- Rad Equip in<br>C/R<br>- Comm Equip<br>- Off-Site<br>Comm Equip<br>- C/R Emerg<br>Equip<br>- Fire and<br>Evac Alarm<br>- Emerg Keys<br>- Loose Parts<br>Monit. | WATCHSTANDING<br>and C/R<br>OPERATIONS<br>Process Rad<br>Monitor<br>Operations |
| Picture Badge        |                                       |  |  |  |



## WEEK 2

| DAY 1   | DAY 2   | DAY 3   | DAY 4  | DAY 5  |
|---|---|---|--|--|
| Shift Turnover<br>Shift Muster<br>Upcoming<br>Evolutions  | Shift Turnover<br>Shift Muster<br>Upcoming<br>Evolutions  | Shift Turnover<br>Shift Muster<br>Upcoming<br>Evolutions  | Shift Turnover<br>Shift Muster<br>Upcoming<br>Evolutions                             | Shift Turnover<br>Shift Muster<br>Upcoming<br>Evolutions   |
| SEMINAR<br>- ZAP 3-51-4<br>- ZAP 3-51-7<br>- ZAP 3-52-1<br>- ZAP 3-52-4<br>- ZAP 5-51-7<br>- RP 1610-5<br>- PT-1<br>- PT-2C | THEORY<br>Factors<br>Affecting<br>ECC's and<br>SDM        | SEMINAR<br>- ZAP 5-51-9<br>- ZAP 5-51-15<br>- ZAP-5-51-16<br>Tech Spec<br>Release Limits<br>2CP 300 and<br>304  | SEMINAR<br>- PT 2E<br>- PT 2R<br>- PT 3B<br>- PT 3C<br>- PT 3D                       | THEORY<br>NIS and GPTR<br>- PT 4A<br>- PT 4B   |
| WATCHSTANDING<br>C/R OPERATIONS<br>Simulate<br>Doing PT's<br>Discussed<br>Previously<br>Discuss<br>Containment<br>Entry     | WATCHSTANDING<br>C/R OPERATIONS<br>Compute ECC<br>and SDM | WATCHSTANDING<br>C/R OPERATIONS<br>Fill Out<br>Containment<br>Purge and Vent<br>Form<br>Go Through<br>Steps of<br>Releasing<br>Also Liquid<br>Release | WATCHSTANDING<br>C/R OPERATIONS<br>Simulate Doing<br>PT's<br>Discussed<br>Previously | WATCHSTANDING<br>C/R OPERATIONS<br>Simulate<br>Doing PT's<br>Discussed<br>Previously<br>Discuss Incore<br>System |

## WEEK 3

| DAY 1  | DAY 2  | DAY 3  | DAY 4  | DAY 5  |
|--|--|--|--|--|
| Shift Turnover<br>Shift Muster<br>Upcoming<br>Evolutions                             | Shift Turnover<br>Shift Muster<br>Upcoming<br>Evolutions | Shift Turnover<br>Shift Muster<br>Upcoming<br>Evolutions                 | Shift Turnover<br>Shift Muster<br>Upcoming<br>Evolutions     | Shift Turnover<br>Shift Muster<br>Upcoming<br>Evolutions           |
| SEMINAR<br>- PT 5<br>- PT 5A<br>- PT 5B  | SEMINAR<br>Selected LER's<br>and OPEX                    | THEORY<br>Subcritical<br>Mult.<br><br>SEMINAR<br>Refueling<br>Discussion | SEMINAR<br>GSEP<br>EPIP                                      | - PT 9<br>- PT 10A<br>- PT 10B<br>- PT 10C                         |
| WATCHSTANDING<br>and OPERATIONS<br>Simulate<br>Doing PT's<br>Discussed<br>Previously | WATCHSTANDING<br>and OPERATIONS<br>System<br>Discussions | WATCHSTANDING<br>and OPERATIONS<br>Discuss<br>Process of<br>Refueling    | WATCHSTANDING<br>and OPERATIONS<br>Implementation<br>of GSEP | WATCHSTANDING<br>and OPERATIONS<br>Discuss and<br>Simulate<br>PT's |

## WEEK 4

| DAY 1                     | DAY 2                     | DAY 3                     | DAY 4                     | DAY 5                     |
|---------------------------|---------------------------|---------------------------|---------------------------|---------------------------|
| Shift Turnover            | Shift Turnover            | Shift Turnover            | Shift Turnover            | Shift Turnover            |
| Shift Muster              | Shift Muster              | Shift Muster              | Shift Muster              | Shift Muster              |
| Upcoming Evolutions       | Upcoming Evolutions       | Upcoming Evolutions       | Upcoming Evolutions       | Upcoming Evolutions       |
| SEMINAR                   | SEMINAR                   | SEMINAR                   | SEMINAR                   | SEMINAR                   |
| - RP 1230-1               | - PT 11                   | - ZAP 10-52-4             | - PT 17                   | - RP 1350-37              |
| - RP 1280-1               | - PT 12                   | - ZAP 10-52-9             | - PT 20                   | - RP 1430-1               |
| - RP 1280-2               | - PT 14                   | - ZAP 13-51-1             | - PT 21                   | - RP 1470-4               |
| - RP 1310                 | - PT 15                   | - ZAP 13-52-8             | - PT 24                   | - RP 1480-2               |
| - RP 1320-1               | - PT 16                   |                           | - PT 101                  | - RP 1520                 |
| - RP 1330-1               |                           |                           | - PT 102                  | - RP 1610-6               |
| - RP 1340-1               |                           |                           | - PT 103                  | - RP 1610-8               |
| - RP 1350-8               |                           |                           |                           | - RP 1740-1               |
|                           |                           |                           |                           | - RP 1740-6               |
| THEORY                    |                           |                           |                           |                           |
| Rad Decay                 | WATCHSTANDING and C/R     | WATCHSTANDING and C/R     | WATCHSTANDING and C/R     | WATCHSTANDING and C/R     |
|                           | OPERATIONS                | OPERATIONS                | OPERATIONS                | OPERATIONS                |
| WATCHSTANDING and C/R     | Discuss and Simulate PT's | Discuss and Simulate AP's | Discuss and Simulate PT's | Discuss and Simulate RP's |
| OPERATIONS                |                           |                           |                           |                           |
| Discuss and Simulate RP's |                           |                           |                           |                           |

## WEEK 5

| DAY 1   | DAY 2  | DAY 3  | DAY 4  | DAY 5  |
|---|--|--|--|--|
| Shift Turnover<br>Shift Muster<br>Upcoming<br>Evolutions                                    | Shift Turnover<br>Shift Muster<br>Upcoming<br>Evolutions                                 | Shift Turnover<br>Shift Muster<br>Upcoming<br>Evolutions                                 | Shift Turnover<br>Shift Muster<br>Upcoming<br>Evolutions                                 | Shift Turnover<br>Shift Muster<br>Upcoming<br>Evolutions |
| THEORY<br>Pump Laws   | SEMINAR<br>Operating<br>Procedures<br>from Refueling<br>to Hot S/D                       | SEMINAR<br>Operating<br>Procedures<br>Hot S/D to<br>Power                                | SEMINAR<br>Operating<br>Procedures<br>Plant S/D to<br>S/D                                | SEMINAR<br>LER's<br>OPEX                                 |
| WATCHSTANDING<br>and C/R<br>OPERATIONS<br>- PT 2A<br>- PT 2I<br>- PT 2J<br>- PT 6<br>- PT 7 | WATCHSTANDING<br>and C/R<br>OPERATIONS<br>Normal<br>Procedures<br>Req to Change<br>Modes | WATCHSTANDING<br>and C/R<br>OPERATIONS<br>Normal<br>Procedures<br>Req to Change<br>Modes | WATCHSTANDING<br>and C/R<br>OPERATIONS<br>Normal<br>Procedures<br>Req to Change<br>Modes | WATCHSTANDING<br>and C/R<br>OPERATIONS                   |



## WEEK 6

| DAY 1                    | DAY 2                                      | DAY 3                       | DAY 4                      | DAY 5  |
|--------------------------|--|-----------------------------|----------------------------|--|
| Shift Turnover           | Shift Turnover                             | Shift Turnover              | Shift Turnover             | Shift Turnover   |
| Shift Muster             | Shift Muster                               | Shift Muster                | Shift Muster               | Shift Muster   |
| Upcoming                 | Upcoming                                   | Upcoming                    | Upcoming                   | Upcoming   |
| Evolutions               | Evolutions                                 | Evolutions                  | Evolutions                 | Evolutions   |
| Electrical<br>Theory     | Instrument<br>Failures and<br>Inst. Theory | Notification<br>Requirement | Control Room<br>Evacuation | THEORY<br>Delayed n and<br>Beff<br>Review Norm<br>Rx S/U |
| WATCHSTANDING<br>and C/R | WATCHSTANDING<br>and C/R                   | WATCHSTANDING<br>and C/R    | WATCHSTANDING<br>and C/R   | WATCHSTANDING<br>and C/R                                 |
| OPERATIONS               | OPERATIONS                                 | OPERATIONS                  | OPERATIONS                 | OPERATIONS   |
| Load Dispatch            | Instrument                                 | Rad Monitor                 | Use of Remote              | Practice   |
| Co-ordination            | Failures,                                  | Alarms                      | S/D Panels                 | Oral Rx S/U  |
| ADS                      | Tech. Specs.,                              |                             |                            | Stressing  |
| Generators in            | Trip Bistables                             |                             |                            | Admin. and   |
| Parallel                 |  |                             |                            | Theory   |
| Elec Equip               |  |                             |                            |  |
| OOS                      |  |                             |                            |  |
| (Non-Plant)              |  |                             |                            |  |

## WEEK 7

| DAY 1   | DAY 2   | DAY 3  | DAY 4   | DAY 5   |
|---|---|--|---|---|
| Shift Turnover<br>Shift Muster<br>Upcoming<br>Evolutions  | Shift Turnover<br>Shift Muster<br>Upcoming<br>Evolutions  | Shift Turnover<br>Shift Muster<br>Upcoming<br>Evolutions         | Shift Turnover<br>Shift Muster<br>Upcoming<br>Evolutions          | Shift Turnover<br>Shift Muster<br>Upcoming<br>Evolutions                        |
| Emerg<br>Procedures   | Emerg<br>Procedures   | Abnormal<br>Procedures   | THEORY<br>Safety Limits<br>Core Thermal<br>Limits                 | Fire<br>Protection  |
| WATCHSTANDING<br>and C/R<br>OPERATIONS<br>Emergency<br>Procedures<br>Oral Rx S/U<br>Stressing<br>Admin. and<br>Theory | WATCHSTANDING<br>and C/R<br>OPERATIONS<br>Emergency<br>Procedures<br>Oral Rx S/U<br>Stressing<br>Admin. and<br>Theory | WATCHSTANDING<br>and C/R<br>OPERATIONS<br>Abnormal<br>Procedures | WATCHSTANDING<br>and C/R<br>OPERATIONS<br>Transient<br>Operations | WATCHSTANDING<br>and C/R<br>OPERATIONS<br>Fire Brigade<br>Responsibil-<br>ities |

## WEEK 8

| DAY 1   | DAY 2   | DAY 3   | DAY 4   | DAY 5                                |
|---|---|---|---|--------------------------------------|
| Shift Turnover<br>Shift Muster<br>Upcoming<br>Evolutions    | Shift Turnover<br>Shift Muster<br>Upcoming<br>Evolutions                                | Shift Turnover<br>Shift Muster<br>Upcoming<br>Evolutions                                | Shift Turnover<br>Shift Muster<br>Upcoming<br>Evolutions                                | C/R Operation<br>Whole Body<br>Count |
| LER's and<br>OPEX   | WATCHSTANDING<br>and C/R<br>OPERATIONS<br>Oral Walk-<br>through<br>approx.<br>3-4 hours | WATCHSTANDING<br>and C/R<br>OPERATIONS<br>Oral Walk-<br>through<br>approx.<br>3-4 hours | WATCHSTANDING<br>and C/R<br>OPERATIONS<br>Oral Walk-<br>through<br>approx.<br>3-4 hours | Program<br>Critique                  |
| WATCHSTANDING<br>and C/R<br>OPERATIONS<br>Logic<br>Diagrams |   |   |   |                                      |