

BOSTON EDISON

PILGRIM NUCLEAR POWER STATION

Procedure 1.3.4.-13

EOP VERIFICATION PROGRAM

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ATTACHMENT A: EOP VERIFICATION PROGRAM CHECKLISTS

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I. PURPOSE

This document provides appropriate requirements and instructions for verifying the PNPS Emergency Operating Procedures (EOPs).

II. APPLICABILITY

The requirements and instructions specified herein apply to the overall process of developing new EOPs and revising existing EOPs.

This document supplements existing PNPS procedures governing procedure preparation, revision, and control but does not supplant them.

III. DEFINITIONS

EOP Source Documents - Guidelines, procedures, data and other records which comprise the technical basis of the EOPs and requirements for their development.

EOP Technical Accuracy - An EOP characteristic that refers to the compatibility of the procedures with plant systems, hardware, and instrumentation; additionally, the conformity of the EOPs with other plant procedures that are referenced therein, and with the content of the technical guidelines from which the EOPs were developed.

EOP Verification - The process of confirming and documenting the technical accuracy and written correctness of the EOPs.

EOP Written Correctness - An EOP characteristic that refers to the conformity of the procedures to the standards of EOP format and editorial content presented in the EOP Writers' Guide.

IV. REQUIREMENTS AND INSTRUCTIONS

A. Verification Procedure

EOP technical accuracy and written correctness shall be verified using the checklists provided in Attachment A. New EOPs shall be evaluated in terms of all checklist criteria; one set of checklists shall be completed for each new EOP. Modifications of existing EOPs need be evaluated only in terms of those criteria directly applicable to new and modified steps; if the number of such steps is relatively small, only one set of checklists need be completed for all revised EOPs.

The instructions listed below shall be followed during performance of verification checklist evaluations:

1. Fill in the following information on the EOP Verification Record (illustrated on page 6 of Attachment A):
 - a. The number, revision, and title of the EOP being verified.
 - b. The PSTG revision which was used as the source document for the EOP being verified.

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IV. A. Verification Procedure (continued)

- c. The Writers' Guide revision which was used as the source document for the EOP being verified.
 - d. The name, organization (or department) and job title (including such information as RO, SRO, Shift Supervisor, etc., as applicable) of the person performing the verification.
2. Write the number of the EOP being verified on the top of each checklist page.
 3. Apply each checklist evaluation criterion, one at a time, to each flowchart element of the EOP being verified. If necessary, refer to the EOP Writers' Guide for guidance on proper interpretation of the criteria presented in checklist Sections A, B, and C. (The relevant paragraph of the EOP Writers' Guide is identified in parentheses after each Section A, B, and C checklist item.)
 4. If all EOP flowchart elements to which a checklist item is applicable are fully compliant with the evaluation criterion, circle "Yes" on the checklist form. If a checklist item does not apply to the EOP being verified, circle "NA". If one or more EOP flowchart elements are not fully compliant with the evaluation criterion, circle "No" and assign a unique discrepancy identification number of the format:

Checklist section - Criterion number - Sequence number

Example: B2-14-2 (Checklist section B2,
criterion 14, second discrepancy)

Multiple occurrences of the same discrepancy may be assigned the same identification number provided that each location of the discrepancy is documented.

5. Complete Part I of an EOP Verification Discrepancy Report (illustrated on page 7 of Attachment A) for each identified discrepancy.
 - a. Uniquely identify the flowchart element(s) to which the identified discrepancy applies; if the discrepancy is one of omission identify the applicable part of the PSTGs.
 - b. Provide a comprehensive narrative description of the nature of the discrepancy. If additional space is needed, use a Continuation Sheet (illustrated on page 9 of Attachment A) and check the associated box on the Report indicating that a continuation sheet is attached. The sequential and total number of continuation sheets used for an individual discrepancy shall be identified in the appropriate blanks on each continuation sheet.

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IV. A. Verification Procedure (continuation)

6. When all checklist items have been completed, the person who performed the verification shall:
 - a. List the checklist section(s) completed.
 - b. Sign and date the EOP Verification Record.
 - c. Attach all completed checklists and Part I Discrepancy Reports including associated continuation sheets to the EOP Verification Record.
 - d. Return the completed package to the Nuclear Operations Manager.

B. Personnel Qualifications

Personnel performing the EOP verification must be knowledgeable in certain specific subject areas related to the activities to be performed. Minimum personnel qualifications for each task are listed in Table 1. Plant operators, subject matter experts, procedure writers, (other than the EOP author(s)), and human factors experts should all be involved in verification of a new EOP. The technical accuracy should be the major task of the operators and the subject matter experts. The written correctness should be the major task of the procedure writers and human factors experts.

The EOP author(s) should not participate in the evaluation of the EOPs relative to the checklist criteria.

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Table 1: Personnel Qualifications for EOP Verification Activities

<u>Activity</u>	<u>Qualifications</u>
Application of Checklist Sections A and B	Familiarity with the PNPS PSTGs and the EOP Writers' Guide
Application of Checklist Sections C and D	Familiarity with the PNPS PSTGs, the EOP Writers' Guide, and plant operations (licensed operator preferred)
Application of Checklist Section E	Familiarity with the EOP format, plant systems and control room instrumentation (licensed operator preferred)

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IV. C. Evaluating, Resolving, and Correcting Identified Discrepancies

Each EOP discrepancy identified through the verification process shall be analyzed to determine if any corrective action is required. Resolution of all identified discrepancies and, if required, completion of associated corrective action(s) shall be documented on Part II of an EOP Verification Discrepancy Report (illustrated on page 8 of Attachment A). If no corrective action is required, appropriate justification shall be provided.

The analysis and resolution of EOP discrepancies and the identification of appropriate corrective actions should be performed as a cooperative effort among several individuals having expertise in the EOPs, the EOP source documents, plant operation, and control room operator training. The procedure author(s) and the individual(s) who completed the verification checklists should participate in the evaluation and resolution of discrepancies. The following process shall be followed in completing this task:

1. Review the description of the discrepancy. (If those who performed the verification are participating in the discrepancy review and resolution process they can supply additional information as necessary.)
2. Determine whether any corrective action is necessary. This decision should be made by :
 - (a) confirming that the identified discrepancy is actually a deviation from the evaluation criterion and
 - (b) assessing the degree of deviation from the evaluation criterion, and
 - (c) investigating whether extenuating or mutually conflicting requirements necessitate a deviation from the evaluation criterion.
3. If corrective action is appropriate, develop a recommended solution which corrects the discrepancy. Solutions may include changes to the EOP, additions to the EOP training program, modifications to plant equipment, or revisions to EOP source documents.
4. Document the agreed-upon corrective action on Part II of the EOP Verification Discrepancy Report, using Continuation Sheets as necessary to completely record the action to be taken. If no corrective action is required, provide appropriate justification. The individual who prepares the description of the required corrective action (or the justification for no corrective action) shall sign and date the Report in the space provided.

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IV. C. Evaluating, Resolving, and Correcting Identified Discrepancies
(continued)

5. When the corrective action has been implemented, the individual who completes the corrective action shall sign and date the associated EOP Verification Discrepancy Report Part II in the space provided.
6. Satisfactory completion of the required corrective action shall be independently verified. The person who performs this task shall sign and date the associated EOP Verification Discrepancy Report Part II in the space provided.

D. Documentation

Documentation of each verified EOP shall consist of the following:

1. EOP Verification Record with all information and signatures.
2. One completed set of EOP Verification Checklists.
3. An EOP Verification Discrepancy Report Part I (including associated Continuation Sheets), appropriately completed for each discrepancy listed on the Verification Checklists.
4. An EOP Verification Discrepancy Report Part II (including associated Continuation Sheets), appropriately completed for each discrepancy listed on the Verification Checklists.

The completed documentation package shall be returned to the Nuclear Operations Manager. A review of all materials for compliance with the requirements and instructions of the EOP Verification Program shall be performed by the Nuclear Operations Manager and the QA Director. These individuals shall sign and date the EOP Verification Record when they have determined that all requirements have been satisfactorily completed.

All records of EOP Verification shall be retained as specified by NOD Procedure 1.3.7.

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ATTACHMENT A

EOP VERIFICATION PROGRAM

CHECKLISTS

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INSTRUCTIONS FOR COMPLETING EOP VERIFICATION CHECKLISTS

1. Use black ink on all checklists
2. Fill out an EOP Verification Record (page A6) as follows:
 - (a) Identify the number, revision, and title of the EOP being verified.
 - (b) Identify the PSTG revision which was used as the source document for the EOP being verified.
 - (c) Identify the Writers' Guide revision which was used as the source document for the EOP being verified.
 - (d) List the section(s) of the EOP Verification Checklists being completed by you.
 - (e) Print your full name, organization (or department) and job title (including such information as RO, SRO, Shift Supervisor, etc., as applicable) under "Verification Performance Completed By."
3. Write the EOP number on the top of each checklist page.
4. Apply each checklist evaluation criterion, one at a time, to each flowchart element of the EOP being verified. If necessary, refer to the EOP Writers' Guide for guidance on proper interpretation of the criteria presented in checklist Sections A, B, and C. (The relevant paragraph of the Writers' Guide is identified in parentheses after each Section A, and B, and C checklist item.)
5. If all EOP flowchart elements to which a checklist item is applicable are fully compliant with the evaluation criterion, circle "Yes" on the checklist form. If a checklist item does not apply to the EOP being evaluated, circle "NA". If one or more EOP flowchart elements are not fully compliant with the evaluation criterion, circle "No" and assign a unique discrepancy identification number of the following format:

Checklist section - Criterion number - Sequence number

Example: B2-14-2 (Checklist section B2,
criterion 14, second discrepancy)

Multiple occurrences of the same discrepancy may be assigned the same identification number provided that each location of the discrepancy is documented.

6. Complete Part I of an EOP Verification Discrepancy Report (illustrated on page A7) for each identified discrepancy.
 - (a) Uniquely identify the flowchart element(s) to which the identified discrepancy applies. If the discrepancy is one of omission, identify the applicable part of the ASGs

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- (b) Provide a comprehensive narrative description of the nature of the discrepancy. If additional space is needed, use a Continuation Sheet (illustrated on page A2) and check the associated box on the Report indicating that a continuation sheet is attached. The sequential and total number of continuation sheets used for an individual discrepancy shall be identified in the appropriate blanks on each continuation sheet.

7. When all checklist items have been completed:

- (a) Sign and date the EOP Verification Record.
- (b) Attach all completed checklists and Part I Discrepancy Reports including associated continuation sheets to the EOP Verification Record.
- (c) Return the completed package to the Nuclear Operations Manager.

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EOP VERIFICATION RECORD

EOP # _____ Revision _____

EOP Title _____

DESIGN INPUT

PSTG Revision _____, Dated _____

EOP Writers'
Guide Revision _____, Dated _____

VERIFICATION PERFORMANCE

EOP Verification Checklist Section(s) _____

Completed by:

Name (Print) _____

Organization & Job Title _____

Signature _____

Date _____

Reviewed by:

Nuclear Operations
Manager _____

Date _____

QA Director _____

Date _____

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EOP VLRIFICATION DISCREPANCY REPORT

Part I

DISCREPANCY ID # _____ CHECKLIST # _____

EOP # _____ REVISION _____

PROCEDURE ELEMENT(s); quote, or describe uniquely:

DESCRIPTION OF DISCREPANCY:

Continuation Sheet(s) attached

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EOP VERIFICATION DISCREPANCY REPORT

Part II

DISCREPANCY ID # _____ CHECKLIST # _____

EOP Number _____ REVISION _____

CORRECTIVE ACTION

Description:

Continuation Sheet(s) attached

Prepared by:

Name (Print) _____

Signature _____ Date _____

Implemented by:

Name (Print) _____

Signature _____ Date _____

Completion Verified by:

Name (Print) _____

Signature _____ Date _____

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EOP _____

SECTION A: PROCEDURE IDENTIFICATION

1. Is the procedure number and title presented in large, boldfaced, underlined print, and placed at the top of the EOP? (II.A, III.D.1.a, III.D.2.a, III.D.3) Yes No NA

Discrepancy ID # _____

2. Is the EOP number unique? (II.A) Yes No NA

Discrepancy ID # _____

3. Is the EOP title descriptive of the procedure content? (II.A) Yes No NA

Discrepancy ID # _____

4. Does the EOP have a title block located in the lower right corner of the bordered area surrounding the EOP? (II.B, III.E.5) Yes No NA

Discrepancy ID # _____

5. Does the EOP title block contain:
(1) plant name,
(2) approval signature,
(3) effective date,
(4) procedure title,
(5) procedure number, and
(6) revision number? (II.B) Yes No NA

Discrepancy ID # _____

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EOP _____

SECTION B: PROCEDURE FORMAT

B1. Format of Flowchart Elements

1. As appropriate, is entry to the EOP indicated at the top (i.e., beginning) of the procedure by either of the following:

- A tabular presentation of entry conditions enclosed in a heavy-bordered rectangle with rounded corners? (III.A.1) Yes No NA
- The word "START" printed in boldfaced uppercase letters enclosed in a heavy-bordered rectangle with rounded corners? (III.A.1, III.D.2.c) Yes No NA

Discrepancy ID # _____

2. Are concurrent execution statements enclosed within a shaded elongated rectangle with entry and exit arrows appropriately located? (III.A.2) Yes No NA

Discrepancy ID # _____

3. Are section designators printed in boldfaced uppercase letters centered within shaded trapezoids? (III.A.3, III.D.1.d, III.D.2.d) Yes No NA

Discrepancy ID # _____

4. Are instructional steps presented as complete sentences enclosed in rectangles? (III.A.4) Yes No NA

Discrepancy ID # _____

5. Are individual decisions which constitute major branch points each phrased as "yes/no" questions and enclosed in diamonds? (III.A.5) Yes No NA

Discrepancy ID # _____

6. Are "Yes" and "No" response path labels capitalized and placed adjacent to arrows extending from decision diamonds? (III.A.5, III.A.6.a, III.A.6.b) Yes No NA

Discrepancy ID # _____

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EOP _____

B1. Format of Flowchart Elements (continued)

7. Do conditional statements that are formatted as a single instructional step:

- a. Have the conditional part of the instruction stated first, followed by the contingent action? (This formatting requirement does not apply for conditional clauses that begin with "Until" or "Except"). (III.A.7) Yes No NA

Discrepancy ID # _____

- b. Have the logic terms been printed in uppercase letters and separated from the remainder of their respective clauses. (This formatting requirement does not apply for conditional clauses that begin with "Until" or "Except".) (III.A.7.b, III.D.2.e) Yes No NA

Discrepancy ID # _____

8. Where a prescribed action is to be performed until certain specified conditions occur, are the conditions prefaced by the word "UNTIL" printed in uppercase letters? (III.A.7.c, III.D.2.e) Yes No NA

Discrepancy ID # _____

9. Where a prescribed action is to be performed with certain specified exceptions, are the exceptions prefaced by the word "EXCEPT" printed in uppercase letters? (III.A.7.d, III.D.2.e) Yes No NA

Discrepancy ID # _____

10. Where a prescribed action may be performed any time before a specified condition occurs, is the condition prefaced by the word "BEFORE" (separated by a double horizontal line) printed in boldfaced uppercase letters and enclosed in a trapezoid? (III.A.7.e, III.D.1.g, III.D.2.e) Yes No NA

Discrepancy ID # _____

11. Where an "and/or" decision structure is required, has one of the following formats (or an acceptable alternate format) been chosen to clearly depict the relationship between the conditional clauses? (III.A.7.f) Yes No NA

- ° A decision table
- ° An appropriately structured series of decision diamonds

Discrepancy ID # _____

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EOP _____

B1. Format of Flowchart Elements (continued)

12. Where plant conditions are specified which cause procedure execution to immediately proceed from one instructional step to a subsequent flowchart element, are the continuation conditions prefaced by the word "WHEN" printed in uppercase letters and separated from the remainder of the respective clause by two periods? (III.A.8, III.D.2.e) Yes No NA

Discrepancy ID # _____

13. Are hold points expressed as instructions beginning with "WAIT UNTIL ..." printed in uppercase letters and enclosed in an octagon? (III.A.9, III.D.2.e) Yes No NA

Discrepancy ID # _____

14. Are override statements formatted as decision tables enclosed in shaded heavy-bordered rectangles with rounded corners? (III.A.10) Yes No NA

Discrepancy ID # _____

15. Do override statements have heavy shaded lines extending downward from the left and right sides of the enclosing rounded-corner rectangle to indicate the flowchart element(s) which the override statement applies? (Extension lines need not be used where an override statement applies to an entire procedure.) (III.A.10) Yes No NA

Discrepancy ID # _____

16. Are procedure exit statements and end points enclosed in heavy-bordered rectangles with rounded corners? (III.A.11) Yes No NA

Discrepancy ID # _____

17. Is supplemental information that applies to the performance of a step located outside the direct path of the flowchart elements, and is the association to the appropriate flowchart element indicated by a dashed line? (III.A.12) Yes No NA

Discrepancy ID # _____

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EOP _____

B1. Format of Flowchart Elements (continued)

18. Are notes printed in italics and located immediately adjacent to (either before or after) the text to which they apply? (III.A.13, III.D.4) Yes No NA
Discrepancy ID # _____
19. For notes, is the word "NOTE" printed in uppercase letters and punctuated with a colon prefacing the text of the note? (III.A.13, III.D.2.h) Yes No NA
Discrepancy ID # _____
20. Are references to cautions indicated within flowchart elements through the use of a circled number with black background? (III.A.14) Yes No NA
Discrepancy ID # _____
21. Is the full text of each referenced caution enclosed in a rectangle and arranged in sequence around the periphery of the EOP, located to the left of or above any figures present? (III.A.14, III.E.6) Yes No NA
Discrepancy ID # _____
22. Is each figure labeled with a number and title printed in boldfaced uppercase letters centered above the figure number having a prefix corresponding to the number of the EOP followed by a unique sequential decimal number? (III.A.15, III.A.15.b, III.D.1.e, III.D.2.f) Yes No NA
Discrepancy ID # _____
23. Are all figures that are referenced within the EOP correctly arranged around the periphery of the procedure in proper numerical sequence? (III.A.15, III.E.6) Yes No NA
Discrepancy ID # _____
24. Are the text and graphics of each figure clear, simple, and easily read? (III.A.15.a) Yes No NA
Discrepancy ID # _____
25. Are axes of all graphs labeled with parameters, units, and numerical values? (III.A.15.c) Yes No NA
Discrepancy ID # _____

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EOP _____

B1. Format of Flowchart Elements (continued)

26. Are both horizontal and vertical grid lines provided on all graphs? (III.A.15.d) Yes No NA
Discrepancy ID # _____
27. Are all graphical presentations of operating regions which are beyond the action level defined by the EOP delineated through the use of cross-hatching or background shading? (III.A.15.e) Yes No NA
Discrepancy ID # _____
28. Is each table labeled with a number and title printed in boldfaced uppercase letters centered above the table, with the table number having a prefix corresponding to the number of the EOP followed by a unique sequential decimal number? (III.A.16, III.A.16b, III.D.1.e, III.D.2.g) Yes No NA
Discrepancy ID # _____
29. Are all tables that are referenced within the EOP correctly arranged around the periphery of the procedure in proper numerical sequence (small tables located adjacent to flowchart elements excepted)? (III.A.16, III.E.6) Yes No NA
Discrepancy ID # _____
30. Are small tables placed alongside the flowchart element in which they are referenced, with a dashed line used to indicate step association? (III.A.12, III.A.16) Yes No NA
Discrepancy ID # _____
31. Are the text and graphics of each table clear, simple and easily read? (III.A.16.a) Yes No NA
Discrepancy ID # _____
32. Are tables placed within a border? (III.A.16.c) Yes No NA
Discrepancy ID # _____
33. Is an appropriate heading provided for each table column, printed in uppercase letters and centered over the respective column? (III.A.16.d, III.D.2.g) Yes No NA
Discrepancy ID # _____

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EOP _____

B1. Format of Flowchart Elements (continued)

34. Is a double horizontal line placed below table column headings? (III.A.16.e) Yes No NA

Discrepancy ID # _____

35. Are table columns divided by vertical lines? (III.A.16.f) Yes No NA

Discrepancy ID # _____

36. Are dashed horizontal lines or blank spaces used within tables to group (or divide) entries as appropriate? (III.A.16.g) Yes No NA

Discrepancy ID # _____

FOR INFORMATION

EOP _____

B2. Step Numbering

1. Are sequential arabic numerals used to number steps for those operator actions that must be executed sequentially and that are presented within the confines of one flowchart element? (III.B) Yes No NA

Discrepancy ID # _____

2. Are step numbers absent from flowchart elements, except as identified in checklist item B2.1 above? (III.B) Yes No NA

Discrepancy ID # _____

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EOP _____

B3. Listed Items

1. Are multiple items for which there is no unconditional pre-designated preference or priority arranged in a list format, with each entry in the list prefaced by a bullet (o)? (III.C) Yes No NA

Discrepancy ID # _____

2. Are bullets which precede listed items indented two spaces to the right of the left margin of the immediately preceding text? (III.C.) Yes No NA

Discrepancy ID # _____

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EOP _____

B4. Use of Emphasis Techniques

1. For the entry conditions element, are the words "ENTRY CONDITIONS" and the column headings printed in boldfaced and uppercase print? Yes No NA
(III.A.1, III.D.1.b, III.D.2.b)

Discrepancy ID # _____

2. For the entry point element, is the word "START" printed in boldfaced and uppercase print? Yes No NA
(III.A.1, III.D.1.c, III.D.2)

Discrepancy ID # _____

3. Are figure axis labels (except for identified engineering units) printed in uppercase print? Yes No NA
(III.A.15.c, III.D.2.f)

Discrepancy ID # _____

4. Are boldfaced letters used within flowchart elements of a slightly larger print size than that normally used for standard text? (III.D.1) Yes No NA

Discrepancy ID # _____

5. Are as-labeled component/instrument designators, control switch positions, and annunciator engravings printed with uppercase letters enclosed in quotation marks? (III.D.2.j, III.D.5) Yes No NA

Discrepancy ID # _____

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EOP _____

B5. Procedure Layout and Associated Conventions

1. Is the EOP devoid of page breaks? (III.E.3) Yes No NA
Discrepancy ID # _____
2. Does a border surround the page? (III.E.4) Yes No NA
Discrepancy ID # _____
3. Is the page border of medium line thickness and at least 1/2 inch from the page edges? (III.E.4) Yes No NA
Discrepancy ID # _____
4. Where multiple EOPs exist on a single page is there a bordered area surrounding each EOP? (III.E.5) Yes No NA
Discrepancy ID # _____
5. Is a title block connected to the lower right hand corner of each bordered area surrounding each EOP? (III.E.5) Yes No NA
Discrepancy ID # _____
6. Are lines ending in arrows used to connect all flowchart elements? (III.E.7) Yes No NA
Discrepancy ID # _____
7. Is the general progression through the EOP down and to the right? (III.E.7) Yes No NA
Discrepancy ID # _____
8. Is at least a 1/2 inch spacing maintained between the page border and:
(a) The EOP title and
(b) flowchart elements (including connecting lines and extension lines emanating from override statements)? (III.E.8) Yes No NA
Discrepancy ID # _____

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EOP _____

B5. Procedure Layout and Associated Conventions (continued)

9. Is a spacing of at least 3/8 inch maintained between flowchart elements? (III.E.9) Yes No NA

Discrepancy ID # _____

10. Is a spacing of at least 3/8 inch maintained between parallel lines connecting flowchart elements, and between extension lines emanating from override statements (except for dotted intraprocedure branch lines and dashed lines connecting supplemental information)? (III.E.10) Yes No NA

Discrepancy ID # _____

11. Has the cross-over of lines connecting flowchart elements been minimized? (III.E.11) Yes No NA

Discrepancy ID # _____

FOR INFORMATION
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EOP _____

B6. Instructions for Printing, Copying, and Storage

1. Is text within flowchart elements single-spaced, with one-and-a-half line spacing maintained between listed items and between multiple instructions or statements enclosed within one flowchart element? (III.F.1) Yes No NA

Discrepancy ID # _____

2. Is text within instructional steps, exit statements, and endpoints left-aligned? (III.F.2) Yes No NA

Discrepancy ID # _____

3. Is text within the individual columns of entry conditions, override statements, and elements with decision table formats left-aligned? (III.F.3) Yes No NA

Discrepancy ID # _____

4. Is text within hold points and decision diamonds centered? (III.F.4) Yes No NA

Discrepancy ID # _____

5. Is type size no smaller than 9-point? (III.F.5) Yes No NA

Discrepancy ID # _____

6. Has a type style been used that is simple, easy-to-read, and devoid of serifs and other character embellishments? (III.F.6) Yes No NA

Discrepancy ID # _____

7. Are all portions of the copy of the EOP fully legible? (II.F.7) Yes No NA

Discrepancy ID # _____

FOR INFORMATION
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EOP _____

SECTION C: PROCEDURE CONTENT

C1. Level of Detail

1. Is the level of detail presented in the EOP consistent with the knowledge and capabilities of a newly-licensed reactor operator (i.e., has the relative complexity of and an operator's familiarity with the evolutions to be performed been appropriately considered)? (IV.A.1) Yes No NA

Discrepancy ID # _____

2. Has excessive detail been avoided? (IV.A.2) Yes No NA

Discrepancy ID # _____

3. Have expected results of routine actions not been stated? (IV.A.2) Yes No NA

Discrepancy ID # _____

4. Have system response times been specified where appropriate? (IV.A.4) Yes No NA

Discrepancy ID # _____

5. Have equipment limitations been identified where appropriate? (IV.A.4) Yes No NA

Discrepancy ID # _____

6. Have instrument inaccuracies been identified where appropriate? (IV.A.4) Yes No NA

Discrepancy ID # _____

7. Has alternate or backup instrumentation been identified where appropriate? (IV.A.4) Yes No NA

Discrepancy ID # _____

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C1. Level of Detail (continued)

8. Have manual override instructions been incorporated where appropriate? (IV.A.4) Yes No NA
Discrepancy ID # _____
9. Have methods of verifying correct plant response been specified where appropriate? (IV.A.3) Yes No NA
Discrepancy ID # _____
10. Are instructions succinct and precise with only short, simple sentences used? (IV.A.5) Yes No NA
Discrepancy ID # _____
11. Where required, has verification of automatic plant response been included as an instruction? (IV.A.5) Yes No NA
Discrepancy ID # _____

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C2. Writing Style

1. Is the wording, grammar, and sentence structure within all flowchart elements easily readable and interpretable? (IV.B.1) Yes No NA

Discrepancy ID # _____

2. Are instructions written in the second person imperative mood with an implicit subject? (IV.B.2) Yes No NA

Discrepancy ID # _____

3. Does each instructional step only address one idea? (IV.B.3) Yes No NA

Discrepancy ID # _____

4. Are the objects of actions specifically stated (i.e., is it obvious exactly what is to be done to what?). (IV.B.4) Yes No NA

Discrepancy ID # _____

5. Have multiple objects (3 or more) been listed individually and separately from the preceding text? (IV.B.4) Yes No NA

Discrepancy ID # _____

6. Where actions must be performed concurrently, are they specifically identified as such? (IV.B.5) Yes No NA

Discrepancy ID # _____

7. Are limits expressed quantitatively? (IV.B.6) Yes No NA

Discrepancy ID # _____

8. Has the need for arithmetical calculations been avoided where possible? (IV.B.7) Yes No NA

Discrepancy ID # _____

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C3. Cautions and Notes

1. Have cautions only been used to identify potential hazards to personnel or equipment? (IV.C) Yes No NA

Discrepancy ID # _____

2. Have notes only been used to provide supplementary information related to performance of a particular action? (IV.C) Yes No NA

Discrepancy ID # _____

3. Has the use of cautions and notes been minimized? (IV.C) Yes No NA

Discrepancy ID # _____

4. Do notes and cautions not contain instructional steps? (IV.C) Yes No NA

Discrepancy ID # _____

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C4. Branching Instructions and Cross References

1. Are all branching instructions clear and specific (i.e., not ambiguous)? (IV.D) Yes No NA

Discrepancy ID # _____

2. Are all branching instructions presented as complete sentences? (IV.D) Yes No NA

Discrepancy ID # _____

3. Where branching is required, does each branching instruction correctly employ one of the following formats:

- Exit this procedure and enter [Procedure X], "[Procedure Title]". Yes No NA

- Exit the [Parameter] section of this procedure and enter [Procedure X], "[Procedure Title]". Yes No NA

- Exit this procedure and enter the [Parameter] section of [EOP -[X] , "[EOP Title]". Yes No NA

- Exit this procedure and enter the [Parameter] section and the [Parameter] section of EOP-[X], "[EOP Title]"; execute these sections of EOP-[X] concurrently. Yes No NA

- Enter [Procedure X], "[Procedure Title]", and execute [Procedure X] concurrently with this procedure. Yes No NA

- Continue at [Y]. Yes No NA

- Return to [Y]. (IV.D) Yes No NA

Discrepancy ID # _____

4. Where an entry to a particular EOP section from another EOP is indicated, has a rectangular arrow been used to enclose the correct number of the other EOP that specifies this entry? (IV.D) Yes No NA

Discrepancy ID # _____

5. Where entry to a particular EOP section is directed, has a rectangular arrow been used to indicate the appropriate entry point location in the identified EOP (including identification that entry is from this procedure)? (IV.D) Yes No NA

Discrepancy ID # _____

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C4. Branching Instructions and Cross References (continued)

6. Does each intra-procedure branch correctly employ a unique letter designator format (i.e., capitalized, circled, and each pair connected by a dotted line)? (IV.D) Yes No NA

Discrepancy ID # _____

7. Has forward and backward branching within the EOP been minimized? (IV.D.) Yes No NA

Discrepancy ID # _____

8. Have cross-references been minimized? (IV.D) Yes No NA

Discrepancy ID # _____

9. For cross-references to supplemental procedures, has the referenced procedure been identified by both number and title, with the title enclosed in quotation marks? (IV.D) Yes No NA

Discrepancy ID # _____

10. Where figures and tables are referenced in the EOP, are they identified by correct number? (Identification of the title is not required.) (III.A.15, III.A.16, IV.D) Yes No NA

Discrepancy ID # _____

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C5. Component Identification

1. Are components clearly and completely identified? (IV.E) Yes No NA

Discrepancy ID # _____

2. Where a specific control switch or instrument is referenced, are as-labeled designations printed in uppercase letters and enclosed in quotation marks? (IV.E.1) Yes No NA

Discrepancy ID # _____

3. Have system titles been capitalized? (The word "system" is not required.) (IV.E.2) Yes No NA

Discrepancy ID # _____

4. For infrequently used components, have locations been specified? (IV.E.3) Yes No NA

Discrepancy ID # _____

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C6. Spelling, Grammar, and Punctuation

1. Is spelling, grammar, and punctuation consistent with standard rules and modern usage? (IV.F) Yes No NA

Discrepancy ID # _____

2. Has excessive use of commas, definite articles, pronouns, and adverbs been minimized to the extent possible? (IV.F.1, IV.F.2) Yes No NA

Discrepancy ID # _____

3. Are elements with columnar formats (e.g., override statements) devoid of commas? (IV.F.1) Yes No NA

Discrepancy ID # _____

4. Have personal pronouns not been used? (IV.F.2) Yes No NA

Discrepancy ID # _____

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C7. Nomenclature, Vocabulary, and Abbreviations

1. Have simple, common words with specific, precise meanings been used? Have ambiguous terms been avoided? (IV.G.1, IV.G.2) Yes No NA

Discrepancy ID # _____

2. Are logic terms used consistent with the definitions provided in Table A1? (IV.G.3) Yes No NA

Discrepancy ID # _____

3. Has terminology been consistent with the definitions provided in Table A2? (IV.G.4) Yes No NA

Discrepancy ID # _____

4. Has the use of abbreviations and acronyms been minimized? Have only those immediately recognizable from Table A3 been used? (IV.G.5) Yes No NA

Discrepancy ID # _____

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Table A1: Application of Logic Terms

<u>Logic Term</u>	<u>Definition</u>
AND	Designates a combination of two or more conditions. Identifies the second and subsequent elements of a set conditions.
BEFORE	Indicates that the respective action is to be performed prior to the occurrence of a specified condition. Does not imply or require any specific margin be observed when a step states that action be taken "before" reaching a limit or value.
EXCEPT	Specifies an exception to or exclusion from taking a prescribed action.
IF	Indicates that performance of the associated action is contingent upon the existence of the identified condition(s). If the identified conditions do not exist, the prescribed action is not to be taken and execution of operator actions proceeds to the following step.
OR	Designates alternative combinations of conditions. Indicates that the associated action is to be performed if any one of the specified conditions occur. (Always used in the inclusive sense.)
THEN	Designates the action portion of an instruction.
WAIT UNTIL	Indicates that execution of subsequent operator actions is not permitted until the identified condition exists.
WHEN	Indicates that upon occurrence or existence of the identified condition(s), execution of the procedure should immediately proceed to the next identified flow chart element.
UNTIL	Indicates that the associated action is to be terminated when the specified condition occurs.

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Table A2: Standard Nomenclature and Definitions

Available:

The state or condition of being ready and able to be used (placed into operation) to accomplish the stated (or implied) action or function.

Cannot be determined:

The value or status of the specified parameter relative to the procedure action level cannot be ascertained using available indications.

Cannot be maintained:

The value of the specified parameter cannot be kept above or below (as applicable) the identified limit. Implies an evaluation based on system performance and availability considered in relation to parameter values and trends. Neither implies that the parameter must actually exceed the limit before the action is taken nor that the action must be taken before the limit is reached.

Cannot be restored:

The value of the specified parameter cannot be returned to within the specified limit. Implies an evaluation based on system performance and availability considered in relation to parameter values and trends. Does not imply any specific time limit, but does not permit prolonged operation beyond the limit.

Close:

To position a valve or damper so as to prevent flow of the process fluid.

Confirm:

Use available indications and, as appropriate, physical observation to establish that the specified action has occurred, conditions are as stated, etc. Includes an implied requirement to take corrective action if the identified conditions do not exist.

Control:

Take action, as necessary, to maintain the value of the specified parameter within applicable limits.

Enter:

Commence performing, in sequence, the steps of the identified procedure.

Execute:

Perform the actions prescribed in the identified step.

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Table A2: Standard Nomenclature and Definitions (continued)

Exit:

Cease performing the steps of the identified procedure.

Initiate:

Operate the necessary controls so as to establish the specified system configuration or plant condition. Prolonged attempts to jumper interlocks, align alternate or backup power supplies, enter remote areas to manually operate valves, etc., are not intended by this term.

Line up:

Establish the prerequisites necessary for system operation. Does not encompass starting main system pumps.

Maintain:

Take action, as necessary, to keep the value of the specified parameter within the applicable limits.

Monitor:

Observe and evaluate at a frequency sufficient to remain apprised of the value, trend, and rate of change of the specified parameter.

Open:

To position a valve or damper so as to allow flow of the process fluid.

Place:

To align a switch to a specified position.

Prevent:

Take action to forestall or avert the state, condition, or action addressed by the step.

Purge:

Force flow through an enclosed volume. Includes establishing both an influent and effluent flowpath.

Restore:

Take action, as necessary, to return the value of the specified parameter to within applicable limits.

Set:

To position a control to a specified scale value.

Shut:

To position a breaker so as to permit the flow of current in the associated circuit.

Slowly:

Only as fast as can be accommodated and still maintain effective control of the associated parameter(s) within specified values or limits.

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Table A2: Standard Nomenclature and Definitions (continued)

<p>Start: To energize a pump or fan motor.</p> <p>Terminate: Stop the stated action, process or evolution. The most direct action to stop the stated action/process/evolution is preferred, but many actions may be required.</p> <p>Throttle: To position a valve or damper so as to partially restrict flow of the process fluid.</p> <p>Trip: To deenergize a pump or fan motor; to position a breaker so as to interrupt or prevent the flow of current in the associated circuit.</p> <p>Vent: Open an effluent (exhaust) flowpath from an enclosed volume.</p>

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Table A3: Standard Acronyms and Abbreviations

<u>Abbreviation</u>	<u>Meaning</u>
ADS	Automatic Depressurization System
APRM	Average Power Range Monitor
ARI	Alternate Rod Insertion
BIIT	Boron Injection Initiation Temperature
CAC	Containment Atmospheric Control
CAD	Containment Atmospheric Dilution
CPS	Counts Per Second
CRD	Control Rod Drive
CS	Core Spray
CST	Condensate Storage Tank
Demin	Demineralizer
DSIL	Drywell Spray Initiation Limit
DW	Drywell
ECCS	Emergency Core Cooling Systems
Elev	Elevation
°F	Degrees Fahrenheit
ft	Feet
FW	Feedwater
GPM	Gallons Per Minute
H&V	Heating and Ventilation
HCLL	Heat Capacity Level Limit
HCTL	Heat Capacity Temperature Limit
HCU	Hydraulic Control Unit

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<u>Abbreviation</u>	<u>Meaning</u>
HPCI	High Pressure Coolant Injection
hr	Hour
HX	Heat Exchanger
in.	Inch
lbs	Pounds
LCO	Limiting Condition for Operation
LI	Level Indicator
LOCA	Loss of Coolant Accident
LPCI	Low Pressure Coolant Injection
LR	Level Recorder
MARFP	Minimum Alternate RPV Flooding Pressure
MCFI	Minimum Core Flooding Interval
MCUTL	Maximum Core Uncovery Time Limit
min	Minimum
MPCWLL	Maximum Primary Containment Water Level Limit
mR	Milliroentgen/Milliren (as appropriate to the context and the units of associated instrumentation).
MSIV	Main Steam Isolation Valve
N/A	Not Applicable
NPSH	Net Positive Suction Head
N.W.	North West
PCPL	Primary Containment Pressure Limit
psig	Pounds per square inch (gauge)

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<u>Abbreviation</u>	<u>Meaning</u>
PSP	Pressure Suppression Pressure
RB	Reactor Building
RBCCH	Reactor Building Closed Cooling Water
RCIC	Reactor Core Isolation Cooling
RHR	Residual Heat Removal
RPM	Revolutions Per Minute
RPV	Reactor Pressure Vessel
RWCU	Reactor Water Cleanup
SBGT	Standby Gas Treatment
SBLC	Standby Liquid Control
S.E.	South East
SRV	Safety Relief Valve
SRVTPLL	SRV Tail Pipe Level Limit
SSW	Salt Service Water
S.W.	South West
TAF	Top of the active fuel
TBCCW	Turbine Building Closed Cooling Water
TIP	Traversing In-Core Probe
&	Ampersand ("AND")
'	Feet (units of elevation)
"	Inches (units of elevation)
%	Percent

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C8. Numerical Values

1. Have limits and values of operating parameters been expressed quantitatively? (IV.H) Yes No NA

Discrepancy ID # _____

2. Have only Arabic numerals been used? (IV.H.1) Yes No NA

Discrepancy ID # _____

3. Do parameter values include the units of measurement? (IV.H.2) Yes No NA

Discrepancy ID # _____

4. Have parameter values been expressed to a precision consistent with the intent of the action(s) specified in the step? (IV.H.3) Yes No NA

Discrepancy ID # _____

5. Are acceptance values expressed in terms of a range rather than a tolerance band to obviate the need for mental arithmetic (e.g., 20 in. to 30 in., rather than 25 in. \pm 5 in.)? (IV.H.4) Yes No NA

Discrepancy ID # _____

6. Has a slash mark (/) been used in place of the word "per" (e.g., mR/hr)? (IV.H.5) Yes No NA

Discrepancy ID # _____

7. Are numbers between zero and one expressed in decimal form with a zero preceding the decimal point (e.g., 0.12)? (IV.H.6) Yes No NA

Discrepancy ID # _____

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SECTION D: CONFORMITY WITH PLANT-SPECIFIC TECHNICAL GUIDELINES

1. Does the wording of each flowchart element comply with the content and intent of the corresponding step of the technical guidelines? Yes No NA
Discrepancy ID # _____
2. Have all steps of the corresponding technical guidelines been incorporated into the EOP? Yes No NA
Discrepancy ID # _____
3. Are cautions referenced at the points specified in the technical guidelines? Yes No NA
Discrepancy ID # _____
4. Are all instructions and cautions in the EOP derived from corresponding technical guideline steps and cautions? Yes No NA
Discrepancy ID # _____
5. Do all numerical values in the EOP correspond to those specified in the technical guidelines? Yes No NA
Discrepancy ID # _____
6. Do the EOP entry conditions correspond to those specified in the technical guidelines? Yes No NA
Discrepancy ID # _____
7. Does the sequence of operator actions and decisions correspond to that presented in the technical guidelines? Yes No NA
Discrepancy ID # _____
8. Does the association of override statements correspond to that defined in the technical guidelines? Yes No NA
Discrepancy ID # _____
9. Are cross-references consistent with those identified in the technical guidelines? Yes No NA
Discrepancy ID # _____

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SECTION E: COMPATIBILITY WITH THE CONTROL ROOM

1. Are as-labeled designations used to identify specific components, alarms, controls, and instruments? Yes No NA

Discrepancy ID # _____

2. Are component locations specified when appropriate (e.g., the least-experienced intended user might be unfamiliar with the location, or when failure to do so may cause confusion)? Yes No NA

Discrepancy ID # _____

3. Is the determination of identified status (value, trend, position, etc.) of plant parameters as specified in the EOP adequately supported by plant instruments, approved instructions, or other appropriate sources of information? Yes No NA

Discrepancy ID # _____

4. Are the values of plant parameters specified in the EOP within the range of the respective control room instruments? Yes No NA

Discrepancy ID # _____

5. Are the units of measurement for values of plant parameters as specified in the EOP the same as those presented on the respective control room instruments? Yes No NA

Discrepancy ID # _____

6. Are the values of parameters specified in the EOP expressed to a precision consistent with the accuracy and precision of the respective instrumentation? Yes No NA

Discrepancy ID # _____

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