BOSTON EDISON

NUCLEAR OPERATIONS DEPARTMENT

PILGRIM NUCLEAR POWER STATION

Procedure 1.3.4.-13

EOP VERIFICATION PROGRAM

Total Pages: 49

FOR INFORMATION ONLY

Approved ~~signature~~ 10/15/87
Quality Assurance Manager /Date

Approved ~~signature~~ 10/16/87
Nuclear Operations Manager /Date

Safety Evaluation: ~~Required~~/Not Required

Table of Contents

ATTACHMENT A: EOP VERIFICATION PROGRAM CHECKLISTS

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.

    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.

IV. A. <u>Verification Procedure</u> (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. <u>Personnel Qualifications</u>

   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.

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

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)

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.

IV. C. <u>Evaluating, Resolving, and Correcting Identified Discrepancies</u>
(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 NOO Procedure 1.3.7.

ATTACHMENT A

EOP VERIFICATION PROGRAM

CHECKLISTS

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(Continued)

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 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 A9) 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.

BOSTON EDISON COMPANY
PILGRIM NUCLEAR POWER STATION

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 VERIFICATION DISCREPANCY REPORT

Part I

DISCREPANCY ID # _____ CHECKLIST # _____

EOP # _____ REVISION _____

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

_____

_____

_____

DESCRIPTION OF DISCREPANCY:

_____

_____

_____

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_____

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 VERIFICATION DISCREPANCY REPORT

CONTINUATION SHEET

DISCREPANCY ID # _____   CHECKLIST # _____

EOP Number _____   REVISION _____

Continuation of: Part I |‾| Sheet ___ of ___

Part II |‾| Sheet ___ of ___

_____

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EOP _____

SECTION A: PROCEDURE IDENTIFICATION

1. Is the procedure number and title presented in   Yes No NA
   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)

   Discrepancy ID # _____

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

   Discrepancy ID # _____

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

   Discrepancy ID # _____

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

   Discrepancy ID # _____

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

   Discrepancy ID # _____

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   Yes No NA
          enclosed in a heavy-bordered rectangle with
          rounded corners? (III.A.1)

       • The ᵈ "START" printed in boldfaced uppercase   Yes No NA
          ⁺⸱ ⸱ enclosed in a heavy-bordered rectangle
          ᵸ rounded corners? (III.A.1, III.D.2.c)

   Discrepancy ID # _____

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

   Discrepancy ID # _____

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

   Discrepancy ID # _____

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

   Discrepancy ID # _____

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

   Discrepancy ID # _____

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

   Discrepancy ID # _____

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   Yes No NA
stated first, followed by the contingent action? (This formatting requirement does not apply for conditional clauses that begin with "Until" or "Except"). (III.A.6)

    Discrepancy ID # _____

    b.   Have the logic terms printed in uppercase   Yes No NA
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)

    Discrepancy ID # _____

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

    Discrepancy ID # _____

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

    Discrepancy ID # _____

10.   Where a prescribed action may be performed any   Yes No NA
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)

    Discrepancy ID # _____

11. Where an "and/or" decision structure is required,   Yes No NA
has one of the following formats (or an acceptable alternate format) been chosen to clearly depict the relationship between the conditional clauses? (III.A.6.e)

    ' A decision table
    ' An appropriately structured series of decision diamonds

    Discrepancy ID # _____

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 # _____

EOP _____

B1.   Format of Flowchart Elements (continued)

18. Are notes printed in italics and located   Yes No NA
    immediately adjacent to (either before or after)
    the text to which they apply? (III.A.12, III.D.4)

    Discrepancy ID # _____

19. For notes, is the word "NOTE" printed in uppercase   Yes No NA
    letters and punctuated with a colon prefacing the
    text of the note? (III.A.13, III.D.2.h)

    Discrepancy ID # _____

20. Are references to cautions indicated within flowchart Yes No NA
    elements through the use of a circled number with
    black background? (III.A.14)

    Discrepancy ID # _____

21. Is the full text of each referenced caution enclosed   Yes No NA
    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)

    Discrepancy ID # _____

22. Is each figure labeled with a number and title printed Yes No NA
    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)

    Discrepancy ID # _____

23. Are all figures that are referenced within the EOP   Yes No NA
    correctly arranged around the periphery of the
    procedure in proper numerical sequence?
    (III.A.15, III.E.6)

    Discrepancy ID # _____

24. Are the text and graphics of each figure clear,   Yes No NA
    simple, and easily read? (III.A.15.a)

    Discrepancy ID # _____

25. Are axes of all graphs labeled with parameters,   Yes No NA
    units, and numerical values? (III.A.15.c)

    Discrepancy ID # _____

EOP _____

B1.   Format of Flowchart Elements (continued)

26. Are both horizontal and vertical grid lines provided   Yes No NA
    on all graphs? (III.A.15.d)

    Discrepancy ID # _____

27. Are all graphical presentations of operating regions   Yes No NA
    which are beyond the action level defined by the EOP
    delineated through the use of cross-hatching or
    background shading? (III.A.15.e)

    Discrepancy ID # _____

28. Is each table labeled with a number and title printed   Yes No NA
    in boldfaced uppercase letters centered above the
    table, with the table number having a prefix corres-
    ponding 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)

    Discrepancy ID # _____

29. Are all tables that are referenced within the EOP   Yes No NA
    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)

    Discrepancy ID # _____

30. Are small tables placed alongside the flowchart   Yes No NA
    element in which they are referenced, with a
    dashed line used to indicate step association?
    (III.A.12, III.A.16)

    Discrepancy ID # _____

31. Are the text and graphics of each table clear,   Yes No NA
    simple and easily read? (III.A.16.a)

    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   Yes No NA
    column, printed in uppercase letters and centered
    over the respective column? (III.A.16.d, III..D.2.g)

    Discrepancy ID # _____   _____

EOP _____

B1.   <u>Format of Flowchart Elements</u> (continued)

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

    Discrepancy ID # _____

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

    Discrepancy ID # _____

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

    Discrepancy ID # _____

EOP _____

B3.   Listed Items

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

   Discrepancy ID # _____

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

   Discrepancy ID # _____

EOP _____

B4. **Use of Emphasis Techniques**

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

   Discrepancy ID # _____

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

   Discrepancy ID # _____

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

   Discrepancy ID # _____

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

   Discrepancy ID # _____

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

   Discrepancy ID # _____

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   Yes No NA
   least 1/2 inch from the page edges? (III.E.4)

   Discrepancy ID # _____ _____

4. Where multiple EOPs exist on a single page is there   Yes No NA
   a bordered area surrounding each EOP? (III.E.5)

   Discrepancy ID # _____

5. Is a title block connected to the lower right hand   Yes No NA
   corner of each bordered area surrounding each EOP?
   (III.E.5)

   Discrepancy ID # _____

6. Are lines ending in arrows used to connect all   Yes No NA
   flowchart elements? (III.E.7)

   Discrepancy ID # _____ _____

7. Is the general progression through the EOP down and   Yes No NA
   to the right? (III.E.7)

   Discrepancy ID # _____

8. Is at least a 1/2 inch spacing maintained between the   Yes No NA
   page border and:
   (a) The EOP title and
   (b) flowchart elements (including connecting lines
        and extension lines emanating from override
        statements)? (III.E.8)

   Discrepancy ID # _____

B5.   Procedure Layout and Associated Conventions (continued)

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

   Discrepancy ID # _____

10. Is a spacing of at least 3/8 inch maintained between   Yes No NA
    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)

    Discrepancy ID # _____

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

    Discrepancy ID # _____

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 # _____

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 # _____

EOP _____

C1.   Level of Detail (continued)

8. Have manual override instructions been incorporated   Yes No NA
   where appropriate? (IV.A.4)

   Discrepancy ID # _____

9. Have methods of verifying correct plant response been   Yes No NA
   specified where appropriate? (IV.A.3)

   Discrepancy ID # _____ _____

10. Are instructions succinct and precise with only short,   Yes No NA
    simple sentences used? (IV.A.5)

    Discrepancy ID # _____

11. Where required, has verification of automatic plant   Yes No NA
    response been included as an instruction? (III.A.5)

    Discrepancy ID # _____

EOP _____

C2.   Writing Style

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

   Discrepancy ID # _____ _____

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

   Discrepancy ID # _____

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

   Discrepancy ID # _____

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

   Discrepancy ID # _____

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

   Discrepancy ID # _____

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

   Discrepancy ID # _____

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

   Discrepancy ID # _____

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

   Discrepancy ID # _____

EOP _____

C3.   Cautions and Notes

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

   Discrepancy ID # _____

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

   Discrepancy ID # _____

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

   Discrepancy ID # _____

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

   Discrepancy ID # _____

EOP _____

C4.   <u>Branching Instructions and Cross References</u> (continued)

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

   Discrepancy ID # _____

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

   Discrepancy ID # _____

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

   Discrepancy ID # _____

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

   Discrepancy ID # _____

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

    Discrepancy ID # _____

EOP _____

C5. Component Identification

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

   Discrepancy ID # _____

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

   Discrepancy ID # _____

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

   Discrepancy ID # _____

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

   Discrepancy ID # _____

EOP _____

C6.   Spelling, Grammar, and Punctuation

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

   Discrepancy ID # _____

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

   Discrepancy ID # _____

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

   Discrepancy ID # _____

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

   Discrepancy ID # _____

EOP _____

C7. Nomenclature, Vocabulary, and Abbreviations

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

   Discrepancy ID # _____

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

   Discrepancy ID # _____

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

   Discrepancy ID # _____

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

   Discrepancy ID # _____

Table A1: Application of Logic Terms

Logic Term	Definition
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.

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 paramaeter 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.

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.

Table A2:   Standard Nomenclature and Definitions (continued)

Start:
   To energize a pump or fan motor.

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.

Throttle:
   To position a valve or damper so as to partially restrict flow of the process fluid.

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.

Vent:
   Open an effluent (exhaust) flowpath from an enclosed volume.

Table A3: Standard Acronyms and Abbreviations

Abbreviation	Meaning
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 Capaacity Level Limit
HCTL	Heat Capacity Temperature Limit
HCU	Hydraulic Control Unit

Abbreviation	Meaning
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)

Abbreviation	Meaning
PSP	Pressure Suppression Pressure
RB	Reactor Building
RBCCW	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

EOP _____

C8.   Numerical Values

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

   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?   Yes No NA
   (IV.H.2)

   Discrepancy ID # _____

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

   Discrepancy ID # _____

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

   Discrepancy ID # _____

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

   Discrepancy ID # _____

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

   Discrepancy ID # _____

EOP _____

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 # _____

EOP _____

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 instru-
   mentation?

   Yes No NA

   Discrepancy ID # _____