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ATTACHMENT 3.1

EMERGENCY OPERATING PROCEDURES

VERIFICATION PROCEDURE

POINT BEACH NUCLEAR PLANT, UNITS 1 AND 2

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1.0 OBJECTIVE

The objective of the Emergency Operating Procedure (EOP) verification procedure is to determine and document that consistency has been maintained between EOP source documents and the PBNP EOP's and to assign responsibilities for conducting the verification process. The EOP source documents are the Emergency Response Guidelines (ERG) that were developed by the Westinghouse Owners Group (WOG) to aid utilities in the development of plant-specific EOP's, the PBNP EOP Writer's Guide, and previous PBNP emergency procedures. The verification is made by evaluating the EOP's for the characteristics of written correctness and technical accuracy.

- EOP Written Correctness - Addresses proper incorporation of information from the plant-specific writer's guide for EOP's and other appropriate administrative policies.
- EOP Technical Accuracy - Addresses proper incorporation of generic and/or plant-specific technical information from EOP source documents and plant hardware into the EOP's.

This verification guideline is interdependent with an EOP validation program. The validation program encompasses the efforts necessary to support a performance evaluation of the EOP's and will be covered in a separate guide.

2.0 REFERENCES

2.1 General

- NUREG 0899, "Guidelines for the Preparation of Emergency Operating Procedures", N.S. N.R.C., August 1982.
- NRC Generic Letter 82-33, "Supplement 1 to NUREG-0737 - Requirements

for Emergency Response Capability", December 17, 1982.

- C. W. Fay Letter to H. R. Denton, "Response to Generic Letter No. 82-33. . .", April 15, 1983.
- PBNP Emergency Operating Procedures, current approved revisions.
- Institute of Nuclear Power Operations (INPO) Guideline, "Emergency Operating Procedures Verification Guideline", 83-004, March 1983.
- Emergency Operating Procedure Writer's Guide, PBNP, 1983.
- Westinghouse Owners Group, "Emergency Response Guidelines", Rev. 1, September 1, 1983.

2.2 Implementation

Source documents, with proper revision numbers used in the comparative evaluation, should be noted on Form 1 of the EOP Verification Forms.

3.0 RESPONSIBILITIES

- 3.1 Manager-PBNP - The Manager PBNP shall approve all EOP's and revisions.
- 3.2 Manager's Supervisory Staff - Manager's Supervisory Staff, or a subcommittee thereof, shall have the responsibility of reviewing the EOP's after verification resolutions have been incorporated, and making a recommendation to the Manager.
- 3.3 Superintendent-Operations(PBNP) - The Superintendent Operations shall approve the verification resolutions.
- 3.4 General Superintendent (NSE&A) - The General Superintendent of NSE&A shall have overall responsibility for the EOP verification process.
- 3.5 EOP Writer - The EOP Writer shall review and comment on resolutions before they are forwarded to the Superintendent Operations for approval. He shall incorporate approved resolutions into the EOP's.

3.6 Verification Team - The verification team shall manage and execute the technical accuracy evaluation and the written correctness evaluation portions of the process. They shall recommend verification resolutions for the Superintendent's Operations approval.

4.0 EOP VERIFICATION PROCESS

4.1 Preparation Phase

The preparation phase consists of the following activities:

- Designating personnel to conduct the comparative evaluation, and
- Obtaining and reviewing the EOP source documents.

4.1.1 Designate Personnel

The verification team shall include two personnel from the NSE&A engineering staff, one person from PBNP operations, and one person from PBNP training. The General Superintendent (NSE&A) shall act as chairman of the verification team. The composition of the verification team shall be approved in writing by the Vice President, Nuclear Power Department. A summary of the qualifications of designated personnel shall be documented.

4.1.2 Obtain and Review the Source Documents

EOP source documents will be listed on Form 1 of the EOP Verification Forms and shall be reviewed by the verification team member responsible for the particular EOP. These documents shall be reviewed to ensure they are complete, current, and applicable. These documents are to include, but not be restricted to, the following source documents:

- PBNP Emergency Operating Procedure Writer's Guide
- WOG Low Pressure ERG's
- PBNP FSAR
- Existing PBNP EOPs

4.2 Assessment Phase

In the assessment phase, the evaluator shall:

- Make a general review of the EOP using the procedure-general portion of the evaluation criteria checklist (Attachment 2) and source documents.
- Indicate on Form 1 of the EOP Verification forms (Attachment 1) that the evaluation was performed, either by checking the acceptance column or by designating the appropriate discrepancy sheet number(s) for any discrepancies identified.
- Make a step-by-step review of the EOP using the step, caution, note-specific portion of the evaluation criteria checklist (Attachment 2) and source documents.
- Indicate (for each step, caution, and note) on Form 2 of the EOP Verification forms (Attachment 1) that the comparative evaluation was performed, either by checking the acceptable column or by designating the appropriate discrepancy sheet number for any discrepancies found.
- Describe the details of any discrepancy between the EOP and the source documents on a discrepancy sheet, Form 3 of the EOP Verification forms (Attachment 1).

4.3 Resolution Phase

In the resolution phase, the evaluator is to:

- Determine a solution for each discrepancy and indicate this as the resolution on the discrepancy sheet (Attachment 1, Form 3).
- The Verification Team will then review the discrepancy resolution using the EOP and any applicable source document.
- After Verification Team review, the discrepancy sheet with the EOP and any applicable source documents are sent to the procedure writer for review and comment.
- After review and comment by the procedure writer, the discrepancy sheet with the EOP and any applicable source documents are sent to the Superintendent Operations for approval of the resolution.
- If the resolution is not approved, the evaluator is to determine a revised solution to the satisfaction of all reviewers. A new discrepancy sheet is to be initiated and the full review and approval process completed.
- The procedure writer updates the EOP with all approved resolutions and returns the modified procedure to the Verification Team.

4.4 Documentation Phase

EOP Verification Forms (Forms 1 and 2) and Discrepancy Sheets (Form 3) shall be maintained per the Administration Procedure, PBNP 2.2.1, "Records Administration and Storage."

The revised EOPs are then submitted for approval per Administration Procedure PBNP 2.1.1, "Classification, Review, and Approval of Procedures."

The EOPs are to be evaluated per the EOP Validation Procedure during operator training. Changes resulting from the Validation Procedure will be reviewed and approved per Administration Procedure PBNP 2.1.1, "Classification, Review, and Approval of Procedures."

Attachment 1

EOP VERIFICATION FORMS

EOP VERIFICATION

FORM #1

EOP TITLE: _____

EOP NUMBER: _____ REVISION: _____

EOP SOURCE DOCUMENTS USED:

EVALUATOR: _____ DATE _____

PROCEDURE-GENERAL VERIFICATION

A. WRITTEN CORRECTNESS

<u>AREAS</u>	<u>ACCEPTABLE</u>	<u>DISCREPANCY SHEET #(s)</u>
LEGIBILITY	_____	_____
EOP FORMAT CONSISTENCY	_____	_____
IDENTIFICATION INFORMATION	_____	_____

B. Technical Accuracy

<u>AREA</u>	<u>ACCEPTABLE</u>	<u>DISCREPANCY SHEET #(s)</u>
Entry Conditions or Symptoms	_____	_____

Form #3

DISCREPANCY SHEET NUMBER _____

EOP: _____

REV.: _____

PAGE NUMBER: _____

STEP NUMBER: _____

DISCREPANCY: _____

RESOLUTION: _____

EVALUATOR: _____ DATE: _____

VERIFICATION TEAM REVIEW AND COMMENTS: _____

_____ BY: _____ DATE: _____

EOP WRITER REVIEW AND COMMENTS: _____

_____ BY: _____ DATE: _____

RESOLUTION APPROVED: YES NO (circle one)

SUPERINTENDENT OPERATIONS: _____ DATE: _____

RESOLUTION INCORPORATED BY: _____ DATE: _____

Attachment 2

EVALUATION CRITERIA CHECKLIST

EVALUATION CRITERIA CHECKLIST

	<u>Area</u>	<u>Reference</u>
I.	PROCEDURE-GENERAL	
A.	Written Correctness	
1.	Mechanics of Style	
a.	Are hyphens used appropriately?	WG 6.2
b.	Is punctuation used properly?	WG 6.3
c.	Is capitalization used properly?	WG 6.4
d.	Does the vocabulary used follow proper rules?	WG 6.5
e.	Are numerical values consistent with established rules?	WG 6.6
f.	Is spelling correct?	
2.	Legibility	
a.	Are the text, tables, graphs, figures, and charts legible to the evaluator?	WG 5.12
b.	Are the tables, graphs, figures, and charts properly labeled and referenced?	WG 5.12
3.	EOP Format Consistency	
a.	Do the following sections exist in the EOP:	WG 4.1
	Section 1 - COVER SHEET with purpose and entry condition	
	Section 2 - OPERATOR ACTIONS with stepwise guidance	
	Section 3 - FOLDOUT PAGE with summarized information (not in CSP Series)	
b.	Is the operator actions section presented in a dual-column format?	WG 4.2
c.	Is the page layout consistent with the sample page format?	WG Fig. 1
d.	Is the foldout page titled "Foldout For EOP-X Series"?	WG 4.2

e. Is the typing format consistent and correct? . WG 7.0

4. Identification Information

a. Is the procedure title descriptive of the purpose of the procedure?

b. Does the cover sheet correctly provide the following: WG 3.1, 3.3

(1) procedure title

(2) procedure designator (EOP or CSP) and number

(3) revision number

(4) number of pages

(5) date of issue

c. Does each page correctly provide WG 3.3

(1) procedure designator and number

(2) "Page _____ of _____" numbers

d. Does the procedure have all its pages in the correct order? Does the last page include the word "END" WG 3.3

B. Technical Accuracy. . .

1. Entry Conditions or Symptoms Information

a. Are the entry conditions of the EPG listed correctly?

b. If additional entry conditions have been added, do they comply with the following:

(1) appropriate entry conditions for which the EOP should be used

(2) not excessive

II. STEP, CAUTION, NOTE-SPECIFIC

A. Written Correctness

1. Information Presentation

- | | |
|--|-------------------|
| a. Are instruction steps numbered correctly? | WG 4.3 |
| b. Are instruction steps constructed to comply with the following: | |
| (1) Steps deal with only one idea. | WG 5.1 |
| (2) Sentences are short and simple. | WG 5.1 |
| (3) Operator actions are specifically stated. | WG 5.1 |
| (4) Objects of operator actions are specifically stated. | WG 5.1 |
| (5) If there are three or more objects, they are listed (and space is provided for operator check-off). | WG 5.1 |
| (6) Punctuation, spelling, and capitalization are proper. | WG 6.3,
WG 6.4 |
| (7) Abbreviations are correct and understandable to the operator. | WG 6.7 |
| c. Are system response and operator response times given where appropriate? | WG 5.1 |
| d. Do complex evolutions exist? They should be prescribed in a series of steps. | WG 5.1 |
| e. Do instruction steps make proper use of logic terms? | WG 5.4 |
| f. When an action instruction is based on receipt of an annunciator alarm, is the setpoint of the alarm identified in the setpoint document? | |
| g. Are precautions and cautions used appropriately? | WG 5.5 |
| h. Are precautions and cautions placed properly and do they extend across the entire page? | WG 5.5 |
| g. Are precautions and cautions constructed to comply with the following? | WG 5.5 |
| (1) They do not contain operator actions. | |

(2) They do not use extensive punctuation for clarity.

(3) They make proper use of emphasis.

(4) They are written in full capitals.

j. Operator Actions Column

(1) Are the expected indications located in the left-hand column? WG 5.2

(2) Are operator actions appropriate for the expected indications? WG 5.2

k. Are the contingency actions located in the right-hand column? WG 5.3

l. Is the level of detail such that only the detail that a newly trained and licensed operator would desire during an emergency condition is provided. WG 5.11

m. Are appropriate action verbs used? WG 5.11

n. Are notes properly used? WG 5.6

o. Are notes properly placed? WG 5.6

p. Are notes worded so that they do not contain operator actions? WG 5.6

q. Are numerical values properly written? WG 5.7

r. Are values specified in such a way that mathematical operations are not required of the user? WG 5.7

s. Is a chart or graph provided in the procedure for necessary operator calculations?

t. Are units of measurement in the EOP the same as those used on equipment? WG 5.12

u. Is underlining used for emphasis of high level steps and some logic terms only? WG 5.8

2. Procedure Referencing and Branching

a. Do the referenced and branched procedures identified in the EOPs exist for operator use? WG 5.9

- | | |
|---|---------|
| b. Is the use of referencing minimized? | WG 5.9 |
| c. Are referencing and branching instructions correctly worded? | WG 5.9 |
| (1) "go to" (branching) | |
| (2) "refer to" (referencing) | |
| d. Do the instructions avoid routing users past important information such as cautions preceding steps? | WG 5.9 |
| e. Are the exit conditions compatible with entry conditions of the referenced or branched procedure? | WG 5.9 |
| 3. Component Identification | |
| a. Are equipment, controls and displays identified in operator language? | WG 5.10 |
| b. If names and numbers on panel nameplates and alarm windows are specifically the item of concern are they quoted verbatim and emphasized by using all capitals? | WG 5.10 |
| c. Are the names of plant system titles emphasized by initial capitalization? | WG 5.10 |
| d. Are components seldom used or difficult to find supplied with location information in parentheses? | WG 5.10 |
| 4. Printed Operator Aids | |
| a. Are charts, graphs, tables, and figures self-explanatory, legible, and readable? | WG 5.12 |
| b. Are the units of measure, titles, and numbering proper and consistent? | WG 5.12 |
| c. Is the foldout page format correct? | WG 5.12 |

B. Technical Accuracy

1. Are EOP/ERG differences:
 - (a) documented
 - (b) explained
2. Is ~~the~~ the ERG technical foundation (strategy) changed by the following changes in EOP steps, cautions, or notes:
 - (a) elimination
 - (b) addition
 - (c) sequence
 - (d) alteration
3. Are correct, plant-specific adaptations incorporated per ERG and existing EOPs:
 - (a) systems
 - (b) instrumentation
 - (c) limits
 - (d) controls
 - (e) indications
4. Have plant specific licensing commitments [e.g., boron precipitation control or R. G. 1.97] applicable to the EOPs been addressed and documented?
5. Quantitative Information
 - a. Do the quantitative values, including tolerance bands, used in the EOP comply with applicable EOP source document?
 - b. Where ERG values are not used in the EOP, are the EOP values computed accurately?
 - c. When calculations are required by the EOP, are equations presented with sufficient information for operator use? WG 5.7
 - d. Are limits expressed quantitatively whenever possible? WG 5.1

6. Plant Hardware Information

- a. Is the following plant hardware specified in the EOP available for operator use:
 - (1) equipment
 - (2) controls
 - (3) indicators
 - (4) instrumentation

- b. Does the specified hardware meet appropriate requirements?
 - (1) QA?
 - (2) Environmental qualification?
 - (3) Redundancy?
 - (4) Power Supply?