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FACIL:50-250 Turkey Point Plant, Unit 3, Florida Power and Light C 05000250
50-251 Turkey Point Plant, Unit 4, Florida Power and Light C 05000251
AUTH.NAME AUTHOR AFFILIATION
WILLIAMS,J.W. Florida Power & Light Co.
RECIP.NAME RECIPIENT AFFILIATION

EISENHUT,D.G. Division of Licensing

SUBJECT: Revised emergency operating procedures,including O-ADM-110 re verification guideline for emergency operating procedures,O-ADM-111 re emergency procedure validation plan & procedures generation package,W/841001 ltr.

DISTRIBUTION CODE: A003D "All Depts" COPIES RECEIVED:LTR 1 ENCL 1 SIZE: 28
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FLORIDA POWER & LIGHT COMPANY

October 1, 1984
L-84-270

Office of Nuclear Reactor Regulation
Attention: Mr. Darrell G. Eisenhut, Director
Division of Licensing
U. S. Nuclear Regulatory Coommission
Washington, D. C. 20555

Dear Mr. Eisenhut:

Re: Turkey Point Units 3 and 4
Docket Nos. 50-250 and 50-251
Upgrade Emergency Operating Procedures (EOPs)
Procedures Generation Package

Supplement 1 to NUREG 0737 identified a requirement to upgrade the Emergency Operating Procedures. Our letter L-83-237, dated April 15, 1983, committed to this revision. The upgrade process consists of several steps, one of which is production of a plant specific Procedures Generation Package (PGP). We committed to provide the PGP by October 1, 1984.

Please find attached the Turkey Point Units 3 and 4 PGP.

Very truly yours,

J. W. Williams, Jr.
Group Vice President
Nuclear Energy

JWW/JEM/js

Attachment

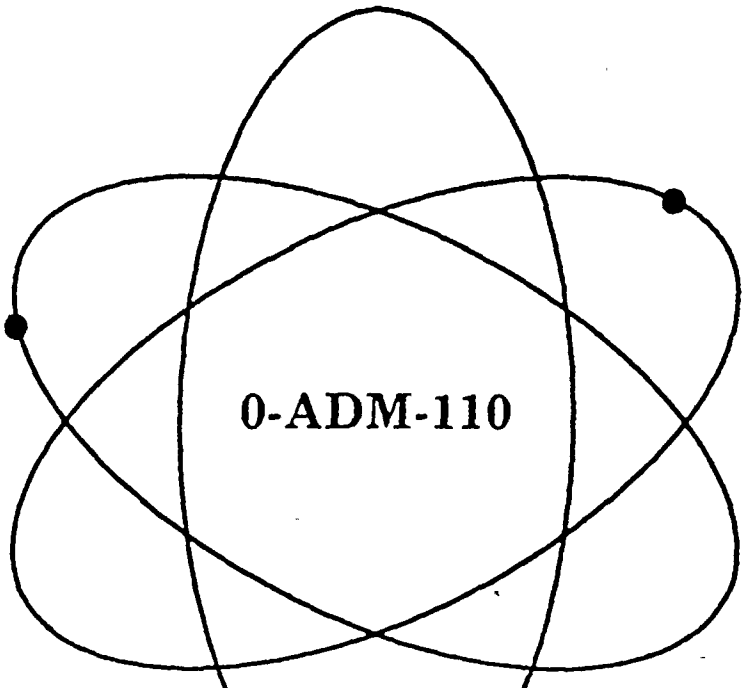
cc: J. P. O'Reilly, Region II
Harold F. Reis, Esquire
PNS-LI-84-345/1A

A003
1/1

PEOPLE...SERVING PEOPLE

Florida Power & Light Company

Turkey Point Nuclear Plant



Title:

Verification Guideline for Emergency Operating Procedures

Safety Related Procedure	
Responsible Department:	Procedure Upgrade
Reviewed by PNSC:	84-165
Approved by Plant Manager-N:	9/26/84

A003
1/1

LIST OF EFFECTIVE PAGES

Page	Revision Date
1-16	9/26/84

TABLE OF CONTENTS

1.0 PURPOSE

1.1 Purpose

The purpose of this procedure is to guide the administrative process used in the verification of the emergency operating procedures (EOPs) and to assign responsibilities for carrying out the activities of the process.

1.2 Scope

This procedure identifies and directs the phases of the verification process.

1.3 Applicability

This procedure applies to initial EOP implementation and revisions for Unit 3 and Unit 4 of the Turkey Point Plant. This procedure applies to the verification of all emergency operating procedures.

2.0 REFERENCES

2.1 Administrative Procedure 0190.14, Document Control and Quality Assurance Records

2.2 ADM-109 - Writers Guide for Emergency Operating Procedures

2.3 ADM-111 - Turkey Point Plant Validation Guideline for Emergency Operating Procedures

2.4 INPO 83-004 - Emergency Operating Procedures Verification Guideline

3.0 RESPONSIBILITIES

3.1 Plant Manager-Nuclear

The Plant Manager - Nuclear shall approve all EOPs and revisions.

3.2 Operations Supervisor

The Operations supervisor shall have overall responsibility for the EOP verification process. He shall determine when EOP verification is needed and its scope. He shall approve the verification resolutions.

3.3 Procedure Upgrade Supervisor

The Procedure Upgrade Supervisor shall manage the written correctness and technical accuracy evaluation process.

4.0 DEFINITIONS

4.1 Emergency Operating Procedures (EOPs)

Plant procedures directing operator action necessary to mitigate the consequences of transients and accidents that cause plant parameters to exceed reactor protection system setpoints, engineered safety features setpoints, or other appropriate technical limits.

4.2 EOP Source Documents

Documents or records upon which EOPs are based.

4.3 EOP Technical Accuracy

A characteristic of EOPs that indicates the degree to which proper incorporation of generic and/or plant-specific technical information from EOP source documents and plant hardware has been made.

4.4 EOP Verification

The evaluation performed to confirm the written correctness of the EOPs and to ensure that the generic and/or plant-specific technical aspects have been properly incorporated.

4.5 EOP Written Correctness

A characteristic of EOPs that indicates the degree to which proper incorporation of information from the PTP Writers Guide for EOPs and other appropriate administrative policies has been made.

4.6 Emergency Response Guidelines (ERGs)

The detailed and complete network of generic emergency response guidance developed by the Westinghouse Owners Group for Westinghouse plants. The guidance includes Optimal Recovery Guidelines, Critical Safety Function Status Trees and Function Restoration Guidelines.

5.0 PROCEDURE

5.1 EOP Verification Process

NOTE

The process of EOP verification consists of four phases: preparation, assessment, resolution, and documentation.

5.1.1 Preparation Phase

1. The preparation phase consists of the following activities:

   a. Designate Personnel: The Operations Supervisor shall appoint the necessary personnel as evaluators to conduct the comparative evaluation. Personnel should be appointed based on operating experience and understanding of plant hardware, the ERGs, and the writers guide.

   b. Obtain and Review the EOP Source Documents: The listing of EOP source documents is provided on Attachment 1, General Verification Checklist. These shall be reviewed by the personnel conducting the assessment phase to ensure they are complete, current, and applicable. Any additional applicable source documents shall be listed.

5.1.2 Assessment Phase

1. In the assessment phase the evaluator shall:

   a. Make a general review of the EOP using the procedure-specific portion of the evaluation criteria and source documents.

   b. Indicate on Attachment 1, General Verification Checklist, that the evaluation was performed, either by initialing indicating acceptance or by designating the appropriate discrepancy on Attachment 3, Discrepancy Sheet.

   c. Make a step-by-step review of the EOP using the step, caution, note-specific portion of the evaluation criteria and source documents.

5.1 EOP Verification Process

5.1.2 Assessment Phase (Cont'd)

1. d. Complete Attachment 2, Technical Accuracy Checklist Verification , and forward the verification checklist with any discrepancy sheets to the Procedure Upgrade Supervisor.

5.1.3 Resolution Phase

1. In the resolution phase, the Procedure Upgrade Supervisor shall:

   a. Review the evaluator's comments and resolve any conflicts between the writers' and evaluators' comments.

   b. Forward potential solutions to the Operations Supervisor for review and approval.

   c. Update applicable source documents and procedures with approved resolutions as directed by the Operations Supervisor.

5.1.4 Documentation Phase

1. The documentation developed throughout the process shall be maintained in accordance with Administrative Procedure 0190.14, Document Control and Quality Assurance Records.

END OF TEXT

ATTACHMENT 1
(Page 1 of 5)

GENERAL VERIFICATION CHECKLIST

EOP Title: _____

EOP Number: _____ Revision: _____

Unit: _____

		Revision/ Approval Date
1.	Westinghouse Emergency Response Guidelines, (ERG)	____
2.	Technical Specifications, Turkey Point Plant	____
3.	FSAR, Turkey Point Plant	____
4.	ADM-109, Writers Guide for Emergency Operating Procedures	____
5.	ADM-100, Procedure Preparation, Review, and Approval	____
6.	Other: _____	____
	_____	____
	_____	____

1.0 PROCEDURE-GENERAL

1.1. Written Correctness

Initials

1.1.1 Legibility

_____ a. Are the printed borders visible on all procedure pages?

_____ b. Are the text, tables, graphs, figures, and charts legible to the evaluator?

1.1.2. EOP Format Consistency

_____ 1. Do the following segments exist in each EOP:

a. TITLE

b. ENTRY CONDITIONS

c. OPERATOR ACTIONS

ATTACHMENT 1
(Page 2 of 5)

GENERAL VERIFICATION CHECKLIST

1.0. PROCEDURE-GENERAL

1.1. Written Correctness (Cont'd)

Initials

_____ 2. Is the operator actions segment presented in a dual-column format?

_____ 3. Is the page layout consistent?

1.1.3. Identification Information

_____ 1. Is the procedure title descriptive of the purpose of the procedure.

_____ 2. Does the cover sheet correctly provide the following:

a. Procedure title

b. Procedure number

c. Unit number

d. Revision date

e. Number of pages

_____ 3. Does each page correctly provide the following?

a. Procedure designator

b. Revision date

c. Page _____ of _____ numbers

_____ 4. Does the procedure have all its pages in the correct order?

ATTACHMENT 1
(Page 3 of 5)

GENERAL VERIFICATION CHECKLIST

2.0. STEP, CAUTION, NOTE-SPECIFIC

2.1. Written Correctness

Initials

2.1.1. Information Presentation

_____ 1. Are instruction steps numbered correctly?

_____ 2. Are operator-optional sequence steps identified?

3. Are instruction steps constructed to comply with the following:

_____ a. Steps deal with only one idea.

_____ b. Sentences are short and simple.

_____ c. Operator actions are specifically stated.

_____ d. Objects of operator actions are specifically stated.

_____ e. Objects of operator actions are adequately stated.

_____ f. Punctuation and capitalization are proper.

_____ g. Abbreviations are correct and understandable to the operator.

_____ 4. Do instruction steps make proper use of logic structure?

_____ 5. When an action instruction is based on receipt of an alarm, is the setpoint of the alarm identified?

_____ 6. Are notes and cautions used appropriately?

_____ 7. Are notes and cautions placed properly?

ATTACHMENT 1
(Page 4 of 5)

GENERAL VERIFICATION CHECKLIST

2.1. Written Correctness

2.1.1 Information Presentation (Cont'd)

Initials

8. Are notes and cautions constructed to comply with the following:

_____ a. They do not contain operator actions.

_____ b. They do not use extensive punctuation for clarity.

_____ c. They make proper use of emphasis.

_____ 9. Are numerical values properly written?

_____ 10. Are values specified in such a way that mathematical operations are not required of the user?

_____ 11. Is a chart or graph provided in the procedure for necessary operator calculations?

_____ 12. Are units of measurement in the EOP the same as those used on equipment?

2.1.2. Procedure Referencing and Branching

_____ 1. Do the referenced and branched procedures identified in theEOPs exist for operator use?

_____ 2. Is the use of referencing minimized?

3. Are referencing and branching instructions correctly worked?

a. "go to" (branching)

_____ b. "refer to" (referencing)

ATTACHMENT 1
(Page 5 of 5)

GENERAL VERIFICATION CHECKLIST

2.1. Written Correctness

2.1.2 Procedure Referencing and Branching (Cont'd)

Initials		
_____	4.	Do the instructions avoid routing users past important information such as cautions preceding steps?
_____	5.	Are the exit conditions compatible with the entry conditions of the referenced or branched procedure?

Verification Completion Date: _____

Performed By: _____

_____

_____

_____

Reviewed By: _____

All actions required by the verification have been completed:

Approved: _____ Date: _____

ATTACHMENT 2
(Page 1 of 3)

TECHNICAL ACCURACY VERIFICATION CHECKLIST

EOP Title: _____

EOP Number: _____ Revision: _____

Unit: _____

		Revision/ Approval Date
1.	Westinghouse Emergency Response Guidelines, (ERG)	_____
2.	Technical Specifications, Turkey Point Plant	_____
3.	FSAR, Turkey Point Plant	_____
4.	ADM-109, Writers Guide for Emergency Operating Procedures	_____
5.	ADM-100, Procedure Preparation, Review, and Approval	_____
6.	Other: _____	_____
	_____	_____
	_____	_____

1.0. STEP, CAUTION, NOTE-SPECIFIC

1.1. Technical Accuracy

1.1.1 Entry Conditions or Symptoms Information

Initials		
_____	1.	Are the entry conditions of the ERG listed correctly?

ATTACHMENT 2
(Page 2 of 3)

TECHNICAL ACCURACY VERIFICATION CHECKLIST

1.1. Technical Accuracy (Cont'd)

1.1.2. Instructional Step, Caution, and Note Information

Initials

_____ 1. Are EOP/ERG differences documented or in the Basis Document?

_____ 2. Is 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:

a. Systems

b. Instrumentation

c. Limits

d. Controls

e. Indications

_____ 4. Have licensing commitments applicable to EOPs been addressed.

_____ 5. Are differences between the licensing commitments and the EOPs or ERGs documented?

1.1.3. Quantitative Information

_____ 1. Do the quantitative values, including tolerance bands, used in the EOP comply with applicable EOP source document?

ATTACHMENT 2
(Page 3 of 3)

TECHNICAL ACCURACY VERIFICATION CHECKLIST

1.1 Technical Accuracy

Initials

1.1.3 Quantitative Information (Cont'd)

_____ 2. Where ERG values are not used in the EOP, are the EOP values computed accurately?

_____ 3. When calculations are required by the EOP, are equations presented with sufficient information for operator use?

1.1.4. Plant Hardware Information

_____ 1. Is the following plant hardware specified in the EOP available for operator use?

a. Equipment

b. Controls

c. Indicators

d. Instrumentation

Verification Completion Date: _____

Performed By: _____

_____

_____

_____

Reviewed By: _____

All actions required by the verification have been completed:

Approved: _____ Date: _____

ATTACHMENT 3
(Page 1 of 1)

DISCREPANCY SHEET

DISCREPANCY SHEET

EOP _____ Rev. _____ Number _____ Step Number _____

Discrepancy _____

_____

_____

_____

_____

_____

_____

_____

_____

_____

Evaluator _____ Date _____

Resolution _____

_____

_____

_____

_____

_____

_____

_____

_____

Supervisor: _____ Date _____

Approved: Yes No (Circle one)

Operations Supervisor: _____ Date _____

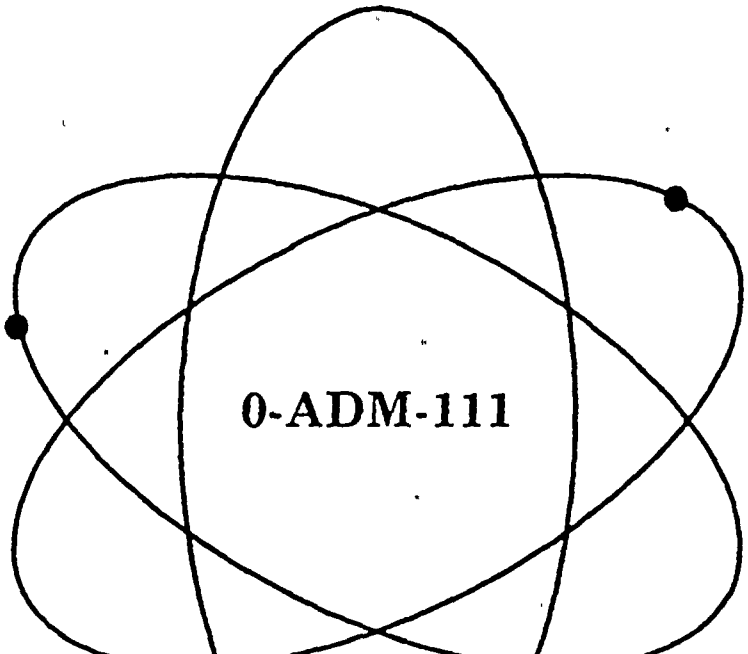
Resolution Incorporated By _____ Date _____

*5-002 XXXXX

FINAL PAGE

Florida Power & Light Company

Turkey Point Nuclear Plant



Title:

Emergency Operating Procedure Validation Plan

Safety Related Procedure

Responsible Department:	Procedure Upgrade
Reviewed by PNSC:	84-165
Approved by Plant Manager-N:	9/26/84

LIST OF EFFECTIVE PAGES

Page	Revision Date
1-17	9/26/84

TABLE OF CONTENTS

1.0 PURPOSE

1.1 This procedure provides guidance in the administrative process used in validation of the emergency operating procedures (EOPs) and to assign responsibilities for the process.

This procedure applies to EOP validation prior to implementation as well as to validation subsequent to implementation for Unit 3 and Unit 4 of Turkey Point Plant.

2.0 REFERENCE

2.1 PTP Technical Specifications

2.2 Turkey Point Plant FSAR.

2.3 Westinghouse Owners Group Emergency Response Guidelines, Revision 1, dated September 1982.

2.4 Emergency Operating Procedures Validation Guideline (INPO 83-006).

3.0 RESPONSIBILITIES

3.1 Plant Manager Nuclear

The Plant Manager - Nuclear shall approve all EOPs and revisions.

3.2 Procedure Upgrade Supervisor

3.2.1 The Procedure Upgrade Supervisor shall be responsible for the following:

1. Managing the validation program and ensuring its smooth coordination with the training program.
2. Determining if validation is needed and its scope.
3. Selecting the validation method or methods.
4. Appointing an observer/reviewer team
   a. One person per operator for the walk-through validation method (one-on-one).
   b. One person for the table-top validation method (one-on-group).

3.2 Procedure Upgrade Supervisor

3.2.1 (Cont'd)

5. Reviewing discrepancies and resolutions forwarded to him by observer/review personnel.

6. Forwarding recommended resolutions and procedure changes to the Plant Manager for approval.

4.0 DEFINITIONS

4.1 Emergency Operating Procedure (EOPs)

Plant procedures directing operator actions necessary to mitigate consequences of transients and accidents that cause plant parameters to exceed reactor protection setpoints, engineered safety feature setpoints, or other appropriate technical limits.

4.2 Emergency Response Guidelines (ERGs)

Guidelines that provide technical bases for the development of EOPs.

4.3 EOP Source Documents

Documents or records upon which EOPs are based.

4.4 EOP Validation

The evaluation preformed to determine that the actions specified in the EOP can be followed by trained operators to manage the emergency conditions in the plant.

4.0 DEFINITIONS (cont'd)

4.5 Mock-Up

Static device (e.g., models, photos, drawings) that portrays Control Room hardware and configuration.

4.6 Reference Validation

Method of validation whereby data developed in common EOP validation program is referenced by similar plants.

4.7 Scenario

A structural plan of parameter and plant symptom changes that provide operating cues for the conduct of assessment.

4.8 Table-Top Validation

Method of validation whereby personnel explain and/or discuss procedure actions steps for an observer/reviewer in response to a scenario or as part of an actual industry operating experience review.

4.9 Walk-Through Validation

Method of validation whereby Control Room operators conduct a step-by-step enactment of their actions during a scenario for an observer/review team without carrying out the actual control functions.

5.0 INSTRUCTIONS

5.1 Table Top/Walk-Through Methods of Validation

NOTE

Regardless of the validation method, the EOP validation process can be described by the three phases of preparation, assessment, and resolution.

5.1.1 Preparation

1. Table top/walk-through validation method shall use the applicable evaluation criteria presented in Enclosure 1, Evaluation Criteria.

2. The designated reviewer shall be responsible for the following:

   a. Using and completing Attachment 2, EOP Validation Form.

   b. Reviewing the scope of the validation designated by the Procedure Upgrade Supervisor or his representative.

   c. Developing or modifying scenarios to support the scope of validation and filling out Attachment 3, Table-Top/Walk-Through Scenario Form.

   d. Modifying/selecting the developed evaluation criteria to support the scope of validation.

   e. Selecting operators that are representative of the training level expected of all the operators.

   f. Scheduling the needed resources for table-top:

      (1) Observer/reviewer

      (2) Operator(s) involved

      (3) Conference Room

      (4) Sets of EOPs and support procedures

   g. Scheduling the needed resources for walk-through

      (1) Observer/reviewer(s)

      (2) Operator(s) involved

      (3) Control Room or Control Room mock-up

      (4) Set of EOPs and support procedures

5.1 Table Top/Walk-Through Methods of Validation (Cont'd)

5.1.2 Assessment

1. Specific guidance for assessment using each validation method is presented on Enclosure 1, Evaluation Criteria.

2. The designated reviewer shall perform the following duties:

   a. Brief the operator on the scope of validation and how the assessment will be conducted.

   b. Follow the developed or modified scenario by first giving the plant initial conditions and then give the changing plant parameters as talking or walking through the procedures.

   c. Stop the talk-through or walk-through assessment for discussion of any identified discrepancies.

   d. Conduct a debriefing with the operators as soon as possible after each walk-through assessment, using the following sequence:

      (1) Brief the participants on the purpose and objectives for debriefing.

      (2) Have operators present problems and discrepancies which they had identified during assessment.

      (3) Have operators provide possible reasons for problems.

      (4) Present other problems and discrepancies identified during assessment.

      (5) Have operators describe possible reasons for the other problems.

      (6) Summarize the findings of the debriefing for the operators.

   e. Record discrepancies and comments on Attachment 1, Discrepancy Sheet.

5.1 Table Top/Walk-Through Methods of Validation (Cont'd)

5.1.3 Resolution

1. The designated observer/reviewer shall perform the following duties:

   a. Review comments and discrepancies.

   b. Propose resolutions on Attachment 1, Discrepancy Sheet, for the Procedure Upgrade Supervisor.

   c. Submit the validation package to the Procedure Upgrade Supervisor.

2. The Procedure Upgrade Supervisor shall perform the following duties:

   a. Review proposed resolutions with appropriate staff.

   b. Select resolutions for incorporation in the EOPs.

   c. Present the revised EOPs to the Plant Manager for approval.

3. The following documentation shall be submitted as a validation package:

   a. Completed Attachment 1, Discrepancy Sheet

   b. Completed Attachment 2, EOP Validation Form

   c. Completed Attachment 3, Table Top/Walk-Through Scenario Form

   d. Evaluation criteria used

5.2 Referenced Method of Validation

5.2.1 Preparation

1. The designated reviewer shall be responsible for the following:

   a. Using and completing Attachment 2, EOP Validation Form.

   b. Identifying all differences in hardware and shift manpower between the Turkey Point Plant Unit 3 or 4 and the referenced plant.

   c. Identifying the differences in the format and the level of detail between the EOP to be validated and the referenced EOP.

   d. Selecting the applicable data from the referenced validation.

5.2.2 Assessment

1. The designated reviewer shall be responsible for the following:

   a. Evaluation the differences in hardware and shift manpower.

   b. Evaluation the differences in the format and the level of detail.

   c. Recording discrepancies and comments on Attachment 1, Discrepancy Sheet, with the applicable data selected from the referenced validation.

5.2.3 Resolution

1. The designated reviewer shall perform the following duties:

   a. Review comments and discrepancies.

   b. Evaluate the potential impact of any differences between the EOP to be validated and the referenced validation.

   c. Propose resolution on completed Attachment 1, Discrepancy Sheet for the Procedures Upgrade Supervisor.

   d. Recommend EOP validation by table-top/walk-through method to confirm reference validation results.

2. The Procedures Upgrade Supervisor shall perform the following duties:

   a. Review the validation package.

   b. Determine the scope of validation needed to confirm the resolutions and initiate an Attachment 2, EOP Validation Form, if necessary.

   c. Present the revised EOPs to the Plant Manager for approval if subsequent validation is not required.

3. The following documentation shall be submitted with the validation package:

   a. Completed Attachment 1, Discrepancy Sheet

   b. Completed Attachment 2, EOP Validation Form used

   c. Reference validation package

   d. Selected reference data

5.3 Documentation

The documented items needed to provide a history of the validation program are specified on each validation method. These items shall be maintained as a validation package in the document control storage area in accordance with AP 0190.14, Document Control and Quality Assurnce Records.

ENCLOSURE 1
(Page 1 of 3)

EVALUATION CRITERIA

LEGEND

x = Applicable to the validation method
o = Not Applicable to the validation method
T-T = Table-top validation method
W-T = Walk-through validation method

T-T	W-T		
		1.0	USABILITY
		1.1	LEVEL OF DETAIL
x	x	1.1.1	Is there sufficient information to perform the specified actions at each step?
x	x	1.1.2	Are the alternatives adequately described at each decision point?
x	x	1.1.3	Are the labeling, abbreviations, and location information as provided in the EOP sufficient to enable the operator to find the needed equipment?
x	x	1.1.4	Is the EOP missing information needed to anage the emergency condition?
x	x	1.1.5	Are the contingency actions sufficient to address the symptoms?
x	x	1.1.6	Are the titles and numbers sufficiently descriptive to enable the operator to find referenced and branched procedures?
		1.2	UNDERSTANDABILITY
x	x	1.2.1	Is the EOP easy to read?
x	x	1.2.2	Are the figures and tables easy to read with accuracy?
x	x	1.2.3	Can the values on figures and charts be easily etermined?
x	x	1.2.4	Are caution and note statements readily nderstandable?
x	x	1.2.5	Are the EOP steps readily understandable?

ENCLOSURE 1
(Page 2 of 3)

EVALUATION CRITERIA

T-T	W-T		
		2.0	OPERATIONAL CORRECTNESS
		2.1	PLANT COMPATIBILITY
o	x	2.1.1	Can the actions specified in the procedure be performed in the designated sequence?
x	x	2.1.2	Are there alternate success paths that are not included in the EOPs?
o	x	2.1.3	Can the information from the plant instrumentation be obtained, as specified by the EOP?
o	o	2.1.4	Are the plant symptoms specified by the EOP adequate to enable the operator to select the applicable EOP?
o	o	2.1.5	Are the EOP entry conditions appropriate for the plant symptoms displayed to the operator?
o	x	2.1.6	Is information or equipment not specified in the EOP required to accomplish the task.
o	x	2.1.7	Do the plant responses agree with the EOP basis?
o	x	2.1.8	Are the instrument readings and tolerances stated in the EOP consistent with the instrument values displayed on the instruments?
o	x	2.1.9	Is the EOP physically compatible with the work situation (too bulky to hold, binding would not allow them to lay flat in work space, no place to lay the EOPs down to use)?
o	x	2.1.10	Are the instrument readings and tolerances specified by the EOP for remotely located instruments accurate?

ENCLOSURE 1
(Page 3 of 3)

EVALUATION CRITERIA

T-T	W-T		
		2.2	OPERATOR COMPATIBILITY
o	x	2.2.1	If time intervals are specified, can the procedure action steps be performed on the plant within or at the designated time intervals?
o	x	2.2.2	Can the procedure action steps be performed by the operating shift?
o	x	2.2.3	If specific actions are assigned to individual shift personnel, does the EOP adequately aid in the coordination of actions among shift personnel where necessary?
o	x	2.2.4	Can the operating shift follow the designated action step sequences?
o	x	2.2.5	Can the particular steps or sets of steps be readily located when required?
o	x	2.2.6	Can procedure exit point be returned to without omitting steps when required?
x	x	2.2.7	Can procedure branches be entered at the correct point?
x	x	2.2.8	Are EOP exit points specified adequately?

ATTACHMENT 1
(Page 1 of 1)

DISCREPANCY SHEET

EOP:_____ Rev._____ Number_____ Step Number _____

Discrepancy: _____

_____

_____

_____

_____

_____

_____

_____

_____

_____

Evaluator:_____ Date._____

Resolution: _____

_____

_____

_____

_____

_____

_____

_____

_____

Supervisor:_____ Date:_____

Approved: Yes No (Circle one)

Operations Supervisor:_____ Date:_____

Resolution Incorporated By:_____ Date:_____

*F-002 XXX/XX

ATTACHMENT 2
(Page 1 of 1)

EOP VALIDATION FORM

EOP Title. _____

EOP Number: _____ Revision _____

Scope of Validation. _____

_____

_____

_____

Designated Observer/Reviewer(s) _____

_____

_____

_____

_____

_____

Preparation Completed on. _____ By. _____

Assessment Completed on _____ By: _____

Operator(s) Involved:	Qualifications (SRO,RO, Other)

Resolution Completed on: _____ By: _____

Documentation Package Forwarded on: _____ By. _____

*(1-00) X/XX/XX

ATTACHMENT 3
(Page 1 of 1)

TABLE-TOP /WALK-THROUGH SCENARIO FORM

Procedure No _____

Title _____

Date _____

Purpose _____

_____

_____

Scenario Description _____

_____

_____

_____

_____

_____

Initial Plant Conditions _____

_____

_____

_____

Procedure Step Description	Plant Parameter Symptoms to Cause Transition	Transition to (Procedure,Step)

*F-004

FINAL PAGE

PROCEDURES GENERATION PACKAGE

Turkey Point Plant

Unit 3 and Unit 4

PROCEDURES GENERATION PACKAGE

TABLE OF CONTENTS

PROCEDURES GENERATION PACKAGE

TABLE OF CONTENTS

PROCEDURES GENERATION PACKAGE

1.0 INTRODUCTION

1.1 PURPOSE

The purpose of this Procedures Generation Package (PGP) is to describe the Emergency Operating Procedures (EOPs) development at Turkey Point Plant Units 3 and 4 which are Westinghouse 3 - loop pressurized water reactors.

1.2 SCOPE

This document was developed in response to Supplement 1 to NUREG-0737, Item 7.2b, Page 15.

1.3 ORGANIZATION

This document consists of the following six parts:

Section 1.0	Introduction
Section 2.0	Plant Specific Technical Guidelines
Section 3.0	Writers Guide for EOPs
Section 4.0	EOP Verification Program
Section 5.0	EOP Validation Program
Section 6.0	EOP Training Program

Each part describes the approach taken as part of the overall EOP Implementation Plan for Turkey Point Plant Unit 3 and Unit 4.

2.0 PLANT-SPECIFIC TECHNICAL GUIDELINES

2.1 GENERAL

2.1.1 The following program for converting the Westinghouse Owners Group Emergency Response Guidelines (ERGs) into EOPs has been developed and will be used by Turkey Point Plant Unit 3 and Unit 4.

2.1.2 The Westinghouse Owners Group Emergency Response Guidelines, Revision 1, dated September 1, 1983, will be used for the implemented EOPs.

2.1.3 The following major items were considered in the methodology to be used:

1. Mechanics of conversion
2. Location of the plant-specific technical information
3. How the plant-specific technical information will be used
4. The use of existing EOP's
5. Documentation requirements
6. Use of the background information supplied with technical guidelines

2.2 PROGRAM DESCRIPTION

2.2.1 Mechanics of Conversion

1. Preparation

The designated EOP writing team will obtain and review the following Plant-specific Technical Information (EOP source documents):

a. Westinghouse Owners Group Emergency Response Guidelines (ERGs), Revision 1, with background information

b. FSAR Unit 3 and Unit 4

c. Turkey Point Plant Writers Guide for Emergency Operating Procedures

d. Technical Specifications for Unit 3 and Unit 4

e. The most current revision of existing EOPs

f. As-built plant drawings

2. Writing Plant Specific EOPs from Westinghouse ERGs

The EOP writing team will follow the ERG's step-by-step, adding footnoted information where designated. Concurrently, the writers will review appropriate EOP source documents. The use of plant specific technical information or analysis resulting from plant unique design will be included to the ERG format. The inclusion of these design requirements will be covered by two separate documents, the Basis Document, which outlines the logic used for inclusion of the step into the ERG, and the Transition Document, which delineates the flow of information from the ERGs to the plant specific EOPs. The Basis Document is described in 0-ADM-109, Writers Guide for EOPs, for Turkey Point.

3. Transition from Existing EOPs to the Upgraded Plant Specific EOPs

The EOP writing team will ensure that required information in the existing EOPs is properly incorporated into the upgraded plant specific EOPs which are derived from the Westinghouse ERGs. This will be accomplished by means of a Transition Document, detailed in the Turkey Point EOP Writers Guide, 0-ADM-109.

2.2.2 Documentation

The completed Transition Documents will be provided as a source document to assist in the EOP verification process and in the revision, review and approval process.

3.0 WRITERS GUIDE FOR EOPs

3.1 GENERAL

3.1.1 A writers guide for EOPs is a plant-specific document that provides instructions for writing EOPs. In addition to establishing sound writing principles, the guide helps to promote consistency among all EOPs and their revisions, independent of the number of EOP writers.

3.1.2 The writers guide will be revised, as necessary, based on feedback from operator training, experience, and procedure validation.

3.2 DOCUMENT DESCRIPTION

3.2.1 Information on the following major items is included in the plant-specific writers guide for EOPs.

1. EOP format
2. EOP organization
3. EOP content
4. Mechanics of style

3.2.2 The Turkey Point Plant Writers Guide for Emergency Operating Procedures, is based on both the industry document Emergency Operating Procedures Writing Guideline (INPO 82-017), and the Writers Guide for Emergency Response Guidelines dated September 1, 1983, developed by the Westinghouse Owners Group.

4.0 EOP VERIFICATION PROGRAM

4.1 GENERAL

EOP verification is the evaluation performed to confirm the written correctness of the procedure and to ensure that applicable generic and plant-specific technical information has been incorporated properly. This evaluation also checks that the human factors aspects presented in the writers guide for EOPs have been applied.

4.2 PROGRAM DESCRIPTION

4.2.1 When developing this EOP verification program, the following major items were considered:

1. How EOP verification will be performed
2. How completion of the EOP verification process will be documented
3. What process will be used in resolving discrepancies

4.2.2 The verification program is based on the industry document Emergency Operating Procedures Verification Guideline (INPO 83-004), developed by the EOPIA Review Group and published by INPO.

4.2.3 The Turkey Point Plant verification procedure for emergency operating procedures is provided in Administrative Procedure 0-ADM-110 and addresses the following objectives:

1. EOPs are technically correct, i.e, they accurately reflect the technical guidelines and other EOP source documents
2. EOPs are written correctly, i.e., they accurately reflect the Plant-specific Writers Guide
3. A correspondence exists between the procedures and the control room/plant hardware
4. The language and level of information presented in the EOPs are compatible with the qualifications, training, and experience of the operating staff

5.0 EOP VALIDATION PROGRAM

5.1 GENERAL

EOP validation is the evaluation performed to determine that the actions specified in the procedure can be performed by the operator to manage the emergency conditions effectively. The methodology for EOP validation utilizes present, available methods at the Turkey Point Plant while recognizing and allowing for future improvements. The EOP validation will evaluate the operators' ability to manage emergency conditions using the EOPs. It will validate that part of the EOP not covered by any technical validation of generic technical guidelines.

5.2 PROGRAM DESCRIPTION

5.2.1 When developing this EOP validation program, the following major items were considered:

1. How EOP validation will be performed
2. How to appropriately use walk-throughs or table-top methods of validation
3. How operating and training experience will be integrated into the program evaluation
4. The evaluation criteria to be applied and the methods to be followed in resolving discrepancies
5. How completion of the EOP validation process will be documented

5.2.2 The program is based on the industry document Emergency Operating Procedures Validation Guideline, (INPO 83-006), developed by the EOPIA Review Group and published by INPO. The Turkey Point Plant validation procedure for emergency operating procedures is provided in Administrative Procedure 0-ADM-111 and addresses the following objectives:

1. EOPs are usable, i.e., they can be understood and followed without confusion, delays, and errors
2. A correspondence exists between the procedures and the control room/plant hardware
3. The instructions presented in the EOPs are compatible with the shift manpower, qualifications, training, and experience of the operating staff
4. A high level of assurance exists that the procedures will work, i.e., the procedures guide the operator in mitigating transients and accidents

6.0 EOP TRAINING PROGRAM

6.1 GENERAL

The EOP training program was developed to support implementation of the EOPs. The EOP writer interfaces with the Training Department to ensure a supportive program.

6.2 PROGRAM DESCRIPTION

6.2.1 When developing the EOP training program, the following major items were considered:

1. What type of operator training should be provided (initial, requalification)
2. What method of operator training should be followed
3. What operator knowledge and skill level is desired
4. What training material is needed to support EOP training requirements
5. What current operator licensing requirements exist
6. What method should be provided for operator feedback into the training program and EOP development

6.3 TRAINING PROGRAM GOALS

6.3.1 The initial, overall training goals for the EOP training program are as follows:

1. To enable the operators to understand the structure of the EOPs
2. To enable the operators to understand the technical basis of the EOPs
3. To enable the operators to use the EOPs under operational conditions

6.3.2 Training program objectives to support these goals will be developed for each lesson plan.

6.4 INITIAL EOP TRAINING METHODS

The EOP training program is established to instruct operators in the EOPs. The program consists of classroom instruction and procedure walk-throughs. Non-plant specific simulator exercises will be conducted when available but is not considered a requirement for EOP implementation.

6.4.1 Classroom Instruction

Classroom instruction sessions will be conducted. Included in the information presented during this method will be the following:

1. The logic behind the development of EOPs
2. The process used to develop the EOPs
3. The EOPs themselves, including supporting technical and human-factors information

6.4.2 Procedure Walk-Throughs

An important part of the instruction on EOPs will be the practical experience gained through procedure walk-throughs. This walk-through training will also concentrate on information flow and interaction with the physical plant.

6.4.3 Similator Exercises

Training on the EOPs will be conducted for all licensed operators using scenarios on a non-plant specific simulator. Training will be conducted with all operators performing their normal control room functions. Until the plant-specific simulator is completed, complicated scenarios will be discussed during classroom instruction and procedure walk-throughs.

6.5 REQUALIFICATION TRAINING

All licensed operators will conduct procedural walk-throughs for refresher training. The walk-throughs may be conducted either in the plant control room or at a simulator. Simulator scenarios will be as described in Section 6.4.3. Simulator exercises will be evaluated by the Nuclear Training Department or Operations Department Supervision. Evaluation results will be critiqued for feedback to the operators and to determine additional training needs.

6.6 TRAINING ON REVISIONS TO EOPs

Training on revisions to EOPs will be accomplished through a program of required readings (self taught), pre-shift briefings, or lectures in the requalification program. Determination of appropriate methods will be made by the Nuclear Training Department.

6.7 INPUTS INTO TRAINING PROGRAM CHANGES

6.7.1 Supporting Training Material Changes

Changes to supporting training material will be factored into updated lesson plans and operator memos. Some of the supporting material identified to date is as follows:

1. ERGs
2. Background Information
3. Associated WCAPs

6.7.2 Operator Feedback

Operator feedback resulting from EOP verification, EOP validation, and training critique forms will be used to keep the training program and EOPs current and relevant.

6.8 EVALUATION

An evaluation will be performed to ensure that the training program goals have been accomplished.

ATTACHMENT 1

TURKEY POINT PLANT

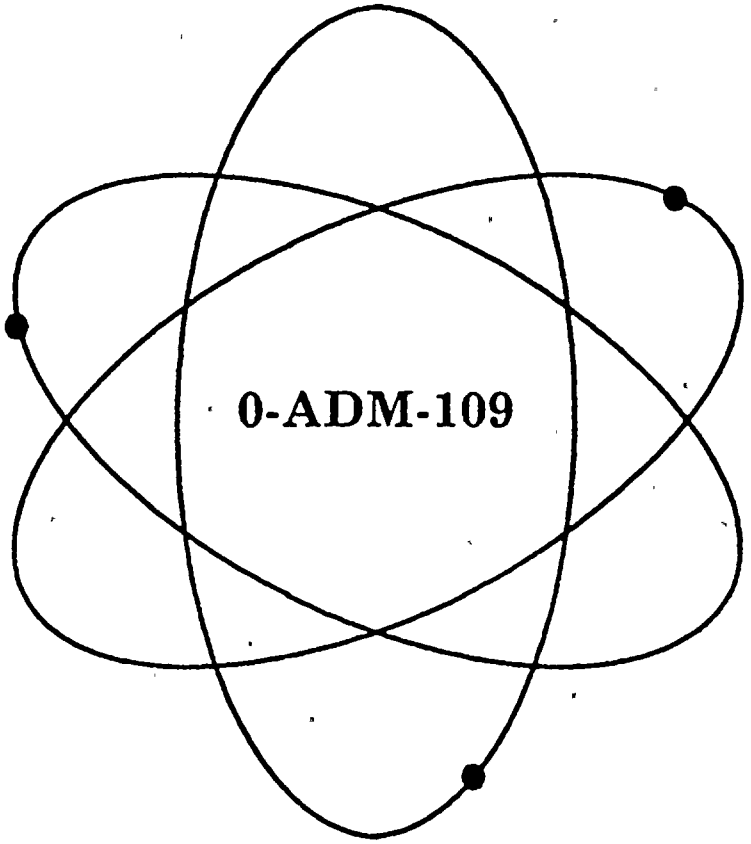
WRITERS GUIDE

FOR

EMERGENCY OPERATING PROCEDURES

Florida Power & Light Company

Turkey Point Nuclear Plant



Title:

Writers Guide for Emergency Operating Procedures

Safety Related Procedure	
Responsible Department:	Procedure Upgrade
Reviewed by PNSC:	84-165
Approved by Plant Manager-N:	9/26/84

LIST OF EFFECTIVE PAGES

Page	Revision Date
1-35	9/26/84

TABLE OF CONTENTS

1.0 PURPOSE

This procedure provides administrative and technical guidance on the preparation of Emergency Operating Procedures. This guide applies to Optimal Recovery Guidelines, Function Restoration Guidelines, and Critical Safety Function Status Trees.

2.0 REFERENCES

2.1 Administrative Procedure 0103.37, Standard Acronyms and Abbreviations

2.2 ADM-100, Procedure Preparation, Review and Approval.

2.3 ADM-101, Writers Guide for Administrative and Normal Operating Procedures

2.4 NUREG-0899 Guidelines for the Preparation of Emergency Operating Procedures.

2.5 INPO 82-017 Emergency Operating Procedures Writing Guideline

2.6 INPO 83-007 Emergency Operating Procedures Generation Package Guideline

2.7 Westinghouse Owners Group Emergency Response Guidelines

3.0 RESPONSIBILITIES

3.1 Originator

The originator of any Emergency Operating Procedure is responsible for researching reference sources, verifying the accuracy of technical information, and confirming the usability of new or revised procedures.

4.0. DEFINITIONS

4.1 Caution

A procedure element containing information about potential danger to equipment or personnel.

4.2 Challenge

A condition which is expected to jeopardize the plant safety state (in reference to a Critical Safety Function).

4.3 Critical Safety Function

An activity which serves to protect the integrity of one or more of the physical barriers against radiation release.

4.4 Diagnosis

The process of identifying a particular plant state by examining the existing symptoms. In symptom-based procedures, diagnosis is the process used to direct the operator to the appropriate procedure steps to address the existing plant state (symptoms) and does not require identification of the cause (event) of the symptoms.

4.5 Emergency Operating Procedures (EOPs)

Plant procedures that specify the operator actions required to mitigate the consequences of transients and accidents that cause plant parameters to exceed reactor protection system setpoints, engineered safety feautres setpoints, or other appropriate technical limits.

4.6 EOP Source Documents

Documents or records upon which EOPs are based.

4.7 Emergency Response Guidelines (ERGs)

The detailed and complete network of generic emergency response guidance developed by the Westinghouse Owners Group for Westinghouse plants. The guidance includes Optimal Recovery Guidelines, Critical Safety Function Status Trees and Function Restoration Guidelines.

4.8 Event Tree

A branching diagram which illustrates schematically the possible combinations of sequential or multiple events.

4.9 Function Restoration Procedures (FRs)

Those procedures which respond to Critical Safety Function challenges. Guidance is provided to restore the Critial Safety Function to a satisfied condition. Typically, actions are based on the severity of the challenge and may not correspond to "good operational practice".

4.10 Human Factors

The elements of relationship between a human and his work, i.e., those things which effect how well a control room operator is able to use a procedure: legibility, vocabulary, grammar, training, external stress, etc.

4.11 Immediate Actions (steps)

Actions which can be performed from memory, i.e., without reference to the written procedure (typically verification of automatic actions).

4.12 May

Used to denote permission; neither a requirement nor a recommendation.

4.13 Note

A procedure element conveying advisory or administrative information.

4.14 Optimal

Most favorable or best (response) for the particular situation.

4.15 Optimal Recovery Procedures (ORP)

Those procedures network which provide guidance to recover the plant in the most efficient manner to a safe and stable end state. Typically, actions correspond to "good operational practice".

4.16 Recovery

The process of returning to a stable and safe condition. Recovery implies establishing operator control over plant processes and taking the plant to a stable and safe end state.

4.17 Restoration

The act of putting something into a prior state. Restoration implies establishing operator control over plant processes and returning the plant state to one in which the Critical Safety Functions are satisfied.

4.18 Shall

Used to denote a requirement.

4.19 Should

Used to denote a recommendation.

4.20 Status Tree

A graphical device to quickly evaluate the condition of a Critical Safety Function. This identifies off-normal conditions and the appropriate procedure for restoration of the Critical Safety Function to a satisfied condition.

4.21 Symptoms

Process parameters used to identify and characterize a plant or condition.

4.22 Transition

A change from one place to another in the EOPs, either from one step to another step or from one procedure to another.

4.23 Two-column format

The manner of presenting operator instruction steps in the EOPs. Expected conditions and responses are listed in the left-hand column to facilitate normal usage. Contingency actions are separated by placement in the right-hand column.

4.24 Will

Used to denote a requirement.

5.0 PROCEDURE

5.1 EOP Identification

5.1.1 Designation and Numbering

1. The emergency operating procedures (EOPs) shall specify operator actions to be taken during plant emergency situations to return the plant to a safe stable condition. Each procedure shall be uniquely identified to facilitate preparation, review, use, and subsequent revision.

2. Every separate EOP shall have its own descriptive name which summarizes the scope of that procedure, or states the event(s) which it is intended to mitigate.

3. Every separate EOP shall have its own alpha-numeric designation to supplement the descriptive title. Letter designators are to be assigned according to the definitions as follows:

   a. E — a procedure for diagnosis and recovery from design basis events.

   b. ES — a procedure which supplements the recovery actions of an E procedure.

   c. ECA — a procedure which supplements both the E and ES procedures by providing recovery actions for low probability or unique event sequences which are not easily covered in the E or ES procedures or which may complicate or reduce the effectiveness of these procedures.

   d. F — a procedure for diagnosis of challenges to a Critical Safety Function -represented in tree format.

   e. FR — a procedure for restoration of a Critical Safety Function (CSF) to a satisfied condition.

   f. S — designator for SUBCRITICALITY CSF

   g. C — designator for CORE COOLING CSF

   h. H — designator for HEAT SINK CSF

   i. P — designator for INTEGRITY CSF

   j. Z — designator for CONTAINMENT CSF

   k. I — designator for INVENTORY CSF

5.1 EOP Identification

5.1.1 Designation and Numbering (Cont'd)

4. Optimal recovery procedures shall be designated by the letters E, ES or ECA plus a sequentially assigned number designator. Each E procedure number designator shall consist of a single integer. Each ES procedure shall consist of the number designator of the reference E procedure, plus a sequentially assigned decimal integer.

5. ECA procedures shall each have a number designator consisting of an integer plus a decimal integer. Related procedures shall be assigned sequential decimal integers.

6. Letter and number designators shall be separated by a hyphen.

EXAMPLE

E-0
ES-0.1
ES-1.2
ES-1.3
ECA-0.0
ECA-1.1
ECA-2.1

7. Critical Safety Function Status Trees shall be designated by the letter F plus a number designator. Number designators shall consist of the sequentially assigned number zero plus a decimal integer.

8. Letter and number designators shall be separated by a hyphen.

EXAMPLE

F-0.1
F-0.2

5.1 EOP Identification

5.1.1 Designation and Numbering (Cont'd)

9. Function Restoration Procedures shall be designated by the letters FR plus additional letter which corresponds to the respective Critical Safety Function. All the separate procedures related to a particular Critical Safety Function are assigned decimal integers in increasing order.

10. The procedure letter and decimal integers are separated from the FR designator by a hyphen.

EXAMPLE

FR-S.1
FR-S.2

5.1.2 Revision Numbering

Every separate procedure shall have an assigned revision date to identify its time of origin.

5.1.3 Page Numbering and Identification

Each page of the procedure shall be identified by the procedure title, alpha-numeric designator, and revision date in a title block at the top of the page. Each page number shall be specified as " of ", located at the top of the page. The last page of instructions shall have the word "END OF TEXT" following the last instruction step.

5.2 Format

NOTE

This section describes the format that is to be applied consistently to all Emergency Operating Procedures.

5.2.1 Procedure Organization

NOTE

Any individual procedure might contain only the three required elements, or additional elements as necessary to present the intent of the procedure.

1. All EOP's are to employ a common structure as required consisting of five elements as follows:

   a. COVER SHEET (all procedures) - identifies procedures by title, number, revision, applicable unit, etc.

   b. INSTRUCTION STEPS (all procedures) - presents the stepwise operator instructions.

   c. FIGURES (as required) -presents usually graphical data to supplement action steps.

   d. ATTACHMENTS (as required) - presents non-graphical information to supplement action steps.

   e. FOLDOUT PAGE (as required) - presents information which is applicable throughout the guideline(s) that it follows.

2. The sequence of procedure elements is always in the order specified. Page numbering is sequential through all the elements comprising any procedure.

5.2 Format (Cont'd)

5.2.2 Page Formats

1. All pages of the Emergency Operating Procedures shall use the same page structure. This page structure employs a pre-printed border to assure all margins are correctly maintained, and pre-printed designator and page boxes to verify completeness and consistency.

2. The pages for presentation of operator action steps shall use a two-column format within the pre-printed border. The left-hand column is designated for expected operator actions and response, and the right-hand column is designated for contingency actions when the expected response is not obtained. These pages shall use pre-printed title blocks above the separate columns (including the "step" column) for uniformity See Enclosure 1.

3. The Foldout Page does not use the bordered-page format. It is intended to summarize only the information which an operator should have continuously available, so page content will vary by procedure. Each Foldout Page shall be titled at the top in large bold type "FOLDOUT FOR E-X SERIES PROCEDURES".

5.2.3 Instructional Step Numbering

1. Procedures steps shall be numbered as follows:

EXAMPLE

1. High-level step

a. Substep (if necessary)

1) Detailed instructions (if necessary)

2. Substeps are lettered sequentially according to expected order of performance. If the order of substep performance is not important, the substeps are designated by bullets (•). If the logical OR is used, both choices must be designated by bullets. This same numbering scheme is to be used in both the right-hand and left-hand columns of the procedures.

5.2 Format

5.2.3 Instructional Step Numbering (Cont'd)

3. For those procedures which are the entry procedures into the ERG set, certain initial steps may be designated "immediate actions". This designation implies that those steps may be performed by the operator, based on his memory, without reference to the written procedure. These steps should be limited to verifications, if possible. Immediate action steps are identified by a NOTE prior to the first action step.

> **NOTE**
>
> *Steps 1 through 10 are IMMEDIATE ACTION steps.*

4. Many of the operator actions provided in a procedure imply continuous performance throughout the remainder of the procedure. This intent is conveyed by the use of appropriate action verbs such as monitor, maintain, or control.

5.3 Writing the Procedure

5.3.1 Purpose and Symptom

1. The first section shall be titled PURPOSE and should briefly describe what the procedure is intended to do. The second section is a summary of those conditions which require entry into the procedure. This section shall be titled SYMPTOMS OR ENTRY CONDITIONS. For procedures that are entry ORPs, a symptom summary is sufficient. For other procedures, which can only be entered by transition from previous procedures, a summary of the entry conditions should be provided.

5.3.2 Operator Actions

1. Steps directing operator action should be written in short and precise language. The statement should present exactly the task which the operator is to perform. The equipment to be operated should be specifically identified, and only those plant parameters should be specified which are presented by instrumentation available in the control room. It is not necessary to state expected results of routine tasks.

5.3 Writing the Procedure

5.3.2 Operator Actions (Cont'd)

2. All steps are assumed to be performed in sequence unless stated otherwise in a preceding NOTE. To keep the individual steps limited to a single action, or a small number of related actions, any complex evolution should be broken down into composite parts.

3. Actions required in a particular step should not be expected to be complete before the next step is begun. If assigned tasks are short, then the expected action should be completed prior to continuing, however, if an assigned task is very lengthy, additional steps may be performed prior to completion. If a particular task must be completed prior to continuation, this condition must be stated clearly in that step or substep.

4. Refer to Enclosure 1 as an example of the format for presenting operator actions in the following steps.

5. The left-hand column of the two-column format shall be used for operator instruction steps and expected responses. The following rules of construction apply:

   a. High Level Action steps should begin with an appropriate verb, or verb modifier.

   b. Expected responses to operator actions are shown in ALL CAPITAL LETTERS.

   c. If a step requires multiple substeps, then each substep should have its own expected response.

EXAMPLE

Check SI Accumulator Isolation Valve Status:

a. Power to isolation valves - AVAILABLE

b. Isolation valves - OPEN

5.3 Writing the Procedure

5.3.2 Operator Actions (Cont'd)

5. d. If only a single task is required by the step, the high-level step contains its own expected response.

EXAMPLE

Check RCP Status - AT LEAST ONE RUNNING

e. Left-hand column tasks should be specified in sequence as if they could be performed in that manner. The user would normally move down the left hand column when the expected response to a particular step is obtained.

f. When the expected response is not obtained, the user is expected to move to the right-hand column for contingency instructions.

g. All procedures should end with a transition to another procedure, or with direction to consult plant supervision for guidance.

6. The right-hand column is used to present contingency actions which are to be taken in the event that a stated condition. event, or task in the left-hand column does not represent or achieve the expected result. Contingency actions will be specified for steps or substeps for which useful alternatives are available. The following rules apply to the right-hand column:

a. Contingency actions should identify directions to override automatic controls and to initiate manually what is normally initiated automatically.

b. Contingency actions should be numbered consistently with the expected response/action for substeps only. A contingency for a single-task high-level step will not be separately numbered but will appear on the same line as its related step.

c. Unlike the left-hand column, contingency instructions are to be written in sentence format.

5.3 Writing the Procedure

5.3.2 Operator Actions (Cont'd)

6. d. If the right-hand column contains multiple contingency actions for a single high-level action in the left-hand column, the phrase "Perform the following:" should be used as the introductory high- level statement.

e. If the right-hand column contains multiple contingency actions which do not correspond to multiple substeps in the left-hand column, then different designators should be used in the two columns.

EXAMPLE

Establish Letdown:	*Establish excess letdown:*
a.	*1)*
b.	*2)*
c.	*3)*

f. As a general rule, all contingent transitions to other procedures take place out of the right-hand column. (Deliberate transitions may be made from the left-hand column.)

g. If a contingency action cannot be completed, the user is expected to proceed to the next step or substep in the left-hand column unless specifically instructed otherwise. When writing the procedure, this rule of usage should be considered in wording subsequent left-hand column instructions.

h. If a contingency action must be completed prior to continuing, that instruction must appear explicitly in the right-hand column step or substep.

5.3 Writing the Procedure (Cont'd)

5.3.3 Use of Logic Terms

1. The logic terms AND, OR, NOT, IF NOT, WHEN, can NOT, and THEN, are to be used to describe precisely a set of conditions or a sequence of actions. Logic terms shall be highlighted for emphasis by capitalizing and underlining.

2. The two-column format equates to the following logic: "IF NOT the expected response in the left-hand column, THEN perform the contingency action in the right-hand column." The logic terms should not be repeated in the right-hand column contingency. However, the logic terms may be used to introduce a secondary contingency in the right-hand column.

3. When action steps are contingent upon certain conditions, the step shall begin with the words IF or WHEN followed by a description of those conditions, a comma, the word THEN, and the action to be taken.

4. IF is used for an unexpected, but possible condition.

5. WHEN is used for an expected condition.

6. AND calls attention to combinations of conditions and shall be placed between each condition. If more than two conditions are to be combined, a list format is preferred.

7. OR implies alternative combinations or conditions. OR means either one, or the other, or both (inclusive).

8. IF ... NOT or IF ... can NOT should be used when an operator must respond to the second of two possible conditions. IF should always be used to specify the first condition. (The right-hand column of the two-column format contains an implicit IF NOT.)

5.3.4 Notes and Cautions

1. Because the present action step wording is reduced to the minimum essential, certain additional information is sometimes desired, or necessary. This non-action information is presented as either a NOTE or a CAUTION.

5.3 Writing the Procedure

5.3.4 Notes and Cautions (Cont'd)

2. To distinguish this information from action steps, it shall extend across the entire page and shall immediately precede the step to which it applies. Each category (NOTE or CAUTION) shall be preceded by its descriptor in large, bold, letters. Multiple statements included under a single heading shall be separately identified by noting them with bullets (•).

CAUTION

When SI actuates, plant conditions exist which require actions not covered in this procedure. Therefore, a transition to E-O, Reactor Trip or Safety Injection, should be made.

- *The foldout page provides a list of important items that should be continuously monitored. If any of the parameters exceed their limits, the appropriate operations should be initiated.*

3. CAUTION denotes some potential hazard to personnel or equipment associated with the following instructional step. NOTE is used to present advisory or administrative information necessary to support the following action instruction. A CAUTION or NOTE may also be used to provide a contingent transition based on changes in plant conditions.

4. As a general rule, neither a CAUTION or a NOTE shall contain an instruction/operator action; however, reference may be made to expected actions in progress.

5. CAUTIONs precede NOTEs when they occur together unless the NOTE contains information which clarifies the CAUTION.

5.3.5 Transitions to Other Procedures or Steps

1. Certain conditions require the use of a different procedure or step sequence. Transitions are specified by using the words "go to" followed by the procedure designator, title (in ALL CAPITAL LETTERS) and step number.

EXAMPLE

Go to ES-0.1, REACTOR TRIP RESPONSE, Step 1

5.3 Writing the Procedure (Cont'd)

5.3.6 Component Identification

1. Equipment, controls and displays shall be identified in "operator language" terms. Standard abbreviations which may be used throughout the procedures are listed alphabetically in Administrative Procedure 0103.37, Standard Acronyms, and Abbreviations. Where similar components are used in both primary and secondary systems, it is always necessary to clarify the location, even if the wording appears redundant.

EXAMPLE

PRZR PORV vs. SG Steam Dump to Atmosphere identifies the pressurizer power operated relief valve as distinct from a steam generator power operated relief valve.

5.3.7 Level of Detail

1. To allow an operator to efficiently execute the action steps in a procedure, all unnecessary detail must be removed. Any information which an operator is required to know (based on his training and experience) should not be included. Many actuation devices (switches) in the control room are similar, even though the remotely performed functions are not, so certain action verbs listed here are recommended.

   a. Use "start/stop" for power-driven rotating equipment.

   b. Use "open/close/throttle" for valves.

   c. Use "control" to describe a manually maintained process variable (flow, level, temperature, presure).

   d. Use "trip/close" for electrical breakers.

   e. Use "place in standby" to refer to equipment when actuation is to be controlled by available (e.g., not reset or blocked) automatic logic circuitry.

5.3 Writing the Procedure (Cont'd)

5.3.8 Figures

1. If needed to clarify operator action instructions, figures shall be added to a procedure. Any figure used should be constructed to fit within the pre-printed page format. Certain rules of construction shall apply:

   a. All wording on the figure should be at least as legible (type size and spacing) as the instruction steps in the procedures.

   b. Each figure should occupy a complete page and should be uniquely identified by a figure and title. The figure number should consist of the guideline designator, without punctuation, followed by a hyphen and an integer. Multiple figures shall be assigned sequential integers.

EXAMPLE

Figure ES-03-1

Figure FR-13-1

   c. Figure titles should explain the intent or content of the figure.

   d. The figure number and title will be placed at the top of the page just above the pre-printed border.

   e. If the figure is a graph, all the numbers and wording should be horizontal and the independent variable should be plotted on the horizontal (X) axis. Grid line density should be consistent with the resolution expected from the graph. Any labeling required on the graph should have a white (not graph) background.

   f. All figures for a procedure are numbered sequentially and are located immediately after the instruction step pages. Figure pages are numbered as pages of that procedure.

   g. References to a figure from an action step should use only the figure number and not the title.

5.3 Writing the Procedure (Cont'd)

5.3.9 Tables

1. Tables may be used within the text of a procedure to clearly present a large number of separate options. A table shall immediately follow the step or substep which makes use of it. Therefore, it does not require a unique number and title. Any table should be completely enclosed by a distinct outline; if necessary, it may extend into the adjacent column because of this delineation.

2. All information presented in a table shall be at least as legible (type size and spacing) as the instruction steps in the procedure.

3. All columns and rows of information in a table should be defined by solid lines.

4. All column and row headings shall be presented in ALL CAPITAL LETTERS.

5.3.10 Attachments

1. Supplementary information or detailed instructions which would unnecessarily complicate the flow of a procedure may be placed in an attachment to that procedure.

2. Attachments are identified by the title "ATTACHMENT" followed by a single letter designator. This title is centered at the top of a standard format page. The pre-printed title blocks should be the same as for the procedure. Attachments should use a single- column, full-page-width format.

3. Physically, Attachments should be located after any Figures belonging to the procedure. Attachment pages are numbered in sequence with normal procedure pages.

5.3.11 Foldout Page

1. Only a single foldout page should be supplied for each "E-series" and "ECA-series" of procedures. Its page number shall reflect its position in that procedure. The foldout page will be titled "FOLDOUT FOR E-X SERIES PROCEDURES", and should use a single-column, full- page-width, format.

2. Each set of operator information shall be numbered sequentially and have an explanatory title. The title shall be capitalized and underlined for emphasis. This page contains those important actions which can be performed at any step in the applicable procedure.

5.3 Writing the Procedure (Cont'd)

5.3.12 Status Tree Format

1. Critical Safety Function Status Trees may be presented in either the "branch" or "block" versions (see Enclosure 2, Status Tree Priority Identification Symbols), but all trees in the set must use the same format. Similarly, the trees may be oriented either vertically or horizontally on a page, so long as the orientation is consistent over the set.

2. Color-coding and/or line-pattern-coding shall be used from each last branch point to its terminus.

3. All text on the Status Trees shall be at least as legible (type size and spacing) as the instruction steps in the procedures.

4. Each Status Tree shall have at the top of the page, a designator block identical to that used in the standard procedure format, and containing the same information.

5. Statements shall be worded so that the favorable response is the downward branch (branch version) or yet exit (block version). Termini shall be ordered so that REDs are uniformly at the top and GREENs at the bottom. Termini order should be RED - ORANGE - YELLOW -GREEN if possible.

5.4 Mechanics of Style

5.4.1 Spelling

1. All spelling should be consistent with modern usage as specified in the Webster's Third New International Dictionary and Webster's New Collegiate Dictionary.

5.4 Mechanics of Style (Cont'd)

5.4.2 Punctuation

1. Punctuation should be used only as necessary to aid reading and prevent misunderstanding. Word order should be selected to require a minimum of punctuation. The following rules apply:

   a. Use a colon to indicate that an item or a list of items is to follow.

EXAMPLE

Stop the following equipment:

   b. Use a comma after conditional phrases for ease of reading.

EXAMPLE

IF level exceeds 50%, THEN ...

   c. Use a period to indicate the end of complete sentences in right-hand column actions statements and in NOTEs and CAUTIONs and for indicating the decimal place in numbers. No periods are to be used in left-hand column action steps.

5.4.3 Capitalization

1. Capitalization shall be used in the procedures for emphasis in the following cases:

   a. Logic terms shall be capitalized and underlined.

   b. Expected responses (left-hand column of instructions) are capitalized.

   c. Titles of procedures should be completely capitalized whenever referenced within any procedure.

   d. Operator action steps may be capitalized for emphasis.

   e. Abbreviations are commonly capitalized.

   f. Section headings on foldout pages are capitalized and underlined.

5.4 Mechanics of Style (Cont'd)

5.4.4 Vocabulary

1. Words used in the procedures should convey precise meaning to the trained operator. Simple words having few syllables are preferred. These are typical of words in common usage.

2. Verbs with specific meaning should be used. The verb should exactly define the task expected to be performed by the operator. A list of frequently used verbs is included as Enclosure 3, Action Verbs.

3. Some words have unique meanings as listed below:

   a. Manual (manually) - an action performed by the operator in the control room. (The word is used in contrast to an automatic action, which takes place without operator intervention.)

   b. Local (locally) - an action performed by an operator outside the control room.

EXAMPLE

"Locally close valve" means directly turning a handwheel to close a valve.

4. Certain other words are to be avoided simply because they are not defined when used without modification. These include: approximately, rapidly and slowly. The same words become acceptable when some clarification is provided; clarification is provided; clarification normally is part of a lower-level substep.

EXAMPLE

Rapidly (up to 200°F/HR) cool down the RCS.

5. Inequalities are to be expressed in words rather than symbols: i.e., "greater than, less than". These words are always appropriate for comparing pressures, temperatures, levels and flowrates. The words "above" and "below" should not be used in this context.

5.4 Mechanics of Style (Cont'd)

5.4.5 Numerical Values

1. All numerical values presented in the procedures should be consistent with what can be read on instruments in the control room (i.e., consistent with instrument scale and range).

2. The number of significant digits presented should be equal to the reading precision of the operator.

3. Acceptance values should be stated in such a way that any addition and subtraction operations are avoided, if possible. This is done by stating acceptance values as limits.

EXAMPLE

250 psig maximum
350°F minimum
between 450°F and 500°F

4. Tolerances can be expressed by stating the normal value followed by the acceptable range in parenthesis.

EXAMPLE

550°F (540°F to 560°F) - Correct

550°F + 10°F - Incorrect

5. Engineering units should always be specified when presenting numerical values for process parameters. They should be the same as those used on the control room displays.

5.4.6 Abbreviations and Acronyms

1. Abbreviations and acronyms should be limited to those commonly used by operators. Abbreviations and acronyms should be used whenever possible to simplify the procedures.

2. Abbreviations and acronyms from Administrative Procedure 0103.37, Standard Acronyms and Abbreviations should be uniformly capitalized whenever they are used.

5.5 Reproduction

5.5.1 Quality of Reproduction

1. Reproduction will be done on a standard copier, single- sided copy only.
2. All copies will be checked for readability.
3. All copies will be checked to insure that all four (4) borders are visible.

5.6 Basis Document (BD)

5.6.1 Purpose

The purpose of this document is to provide the basis used in the preparation of plant emergency operating procedures and for the development of operator training programs.

5.6.2 Title and Designation

Each basis document shall include in its title the same alpha-numeric designator and title of the procedure for which it is written.

EXAMPLE

BD-E-0

Reactor Trip or Safety Injection

5.6.3 Revision Dating

The basis document shall correspond in revision date to the procedure for which it is written. If a new revision of a procedure is approved, appropriate modifications shall be made to its basis document, both in technical content and descriptive material.

5.6 Basis Document (BD) (Cont'd)

5.6.4 Basis Justification

The justification for the use of an instructional step will consist of, but not be limited to, the following information, as applicable.

1. Document used as a basis for developing the associated step.
2. A summary of the reason for the step.
3. Identification of regulatory commitments.
4. Management directives.
5. Plant practices.
6. Vendor recommendations.

5.6.5 Basis Content

The basis for an instructional step should be as brief as possible without compromising the integrity of the document.

5.5.6 Basis Document Placement

The Basis Document will be Attachment 1 for all EOPs.

EXAMPLE

Left Page *Basis Document*	*Right Page* *Procedure*
1. To provide a system flow path	*1. Open TPCW Htx ICW Outlet Valve, (Number)*

5.7 Transistion Document

5.7.1 Use of Transition Documents

1. The Transition Document is used to indicate to the Plant Nuclear Safety Committee where the information is located in the old procedure in respect to an upgrade procedure.

5.7 Transistion Document

5.7.1 Use of Transition Documents (Cont'd)

2. Topics in the old procedure shall be enclosed in a block and a reference made to the location of the old information. If the information has been deleted, this shall be indicated and a general reason stated.

EXAMPLE

EMERGENCY OPERATING PROCEDURE 20000 (E-0), Page 4
IMMEDIATE ACTIONS AND DIAMOSTICS

NOTE 1

5.1.3 Verify the following:

1. Safety Injection flow (FI--943) from at least one train is being delivered on the reactor coolant system when the Reactor Coolant System pressure is below the safety injection pump shutoff head (approximately 1400 psig.) If not, attempt to operate equipment manually or locally.*

NOTE2

NOTE: Safety Injection initiation with flow to the core is an UNUSUAL EVENT. Notify the Plant Supervisor-Nuclear.

NOTE 3

2. Auxiliary Feed water flow from at least one train is being delivered to the steam generators. If not, attempt to operate equipment manually or locally.

TRANSITION DOCUMENT:

NOTE 1

This information is now presented in E-O Step 3.15.

NOTE 2

This information is now presented in Emergency Procedure 20101.

NOTE 3

This information is now presented in E.0 Step 3.16

5.7 Transistion Document

5.7.1 Use of Transition Documents (Cont'd)

3. This transition document shall be included with the upgrade procedures generated from the Procedure Development Group.

END OF TEXT

ENCLOSURE 1
(Page 1 of 1)

EOP SAMPLE PAGE FORMAT

Procedure No	Procedure Title	Page / Approval Date
3-E-0	Reactor Trip or Safety Injection	9 of 13 / X/XX/XX

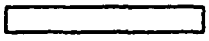
STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED
23	Check If SGs Are Not Faulted:	
	a Check pressure in all SGs. • NO SG PRESSURE DECREASING IN AN UNCONTROLLED MANNER • NO SG COMPLETELY DEPRESSURIZED	a Go to E-2, FAULTED STEAM GENERATOR ISOLATION, Step 1
24	Check If SG Tubes Are Not Ruptured • Condenser air ejector radiation - NORMAL • SG blowdown radiation - NORMAL	Go to E-3, STEAM GENERATOR TUBE RUPTURE, Step 1
25	Check If RCS Is Intact: • Containment radiation - NORMAL • Containment pressure - NORMAL • Containment recirculation sump level - NORMAL	Go to E-1, LOSS OF REACTOR OR SECONDARY COOLANT, Step 1
26	Check If SI Flow Should Be Terminated:	
	a RCS subcooling based on core exit TCs - GREATER THAN 30°F	a DO NOT STOP SI PUMPS Go to Step 28
	b Secondary heat sink • Total feed flow to SGs - GREATER THAN 390 GPM -OR- • Narrow range level in at least one SG - GREATER THAN 1%	b IF neither condition satisfied, THEN DO NOT STOP SI PUMPS Go to Step 28
	c RCS pressure. • Pressure - GREATER THAN 164° PSIG • Pressure - STABLE OR INCREASING	c DO NOT STOP SI PUMPS Go to Step 28
	d PRZR Level - 1%	DO NOT STOP SI PUMPS Try to stabilize RCS Pressure with normal PRZR spray Return to Step 26a

ENCLOSURE 2
(Page 1 of 1)

STATUS TREE PRIORITY IDENTIFICATION SYMBOL

Table 2

STATUS TREE PRIORITY IDENTIFICATION

Color	Line Code	Symbol Code	Status/Response
Red			The critical safety function is under extreme challenge; immediate operator action is required.
Orange			The critical safety function is under severe challenge; prompt operator action is required.
Yellow			The critical safety function condition is off - normal. Operator action may be taken.
Green			The critical safety function is satisfied. No operator action is needed.

ENCLOSURE 3
(Page 1 of 3)

ACTION VERBS

Actuate	To put into action or motion; commonly used to refer to automated, multi-faceted operations
Align	To arrange components into a desired configuration
Allow	To permit a stated condition to be achieved prior to proceeding, for example, "allow discharge pressure to stabilize"
Block	To inhibit an automatic actuation
Check	To perform a comparison with a procedural requirement "Check if SI can be termined"
Close	To change the physical position of a mechanical device so that it prevents physical access or flow or permits passage of electrical current, for example. "close valve V2530"
Complete	To accomplish specified procedural requirements, for example, "complete valve checkoff list "A", "complete data report QA-1," "complete steps 7 through 9 of Section III"
Continue	To go on with a particular process
Control	To manually opeerate equipment as necessary to satisfy guideline requirements on process parameters: pressure, temperature, level, flow, etc.
Decrease	Avoid use because of oral communication problems. To cause a reduction in inventory.
Determine	To calculate or evaluate using formulae or graphs
Energize	To supply electrical energy to (something); commonly used to describe an electrical bus or other dedicated electrical path
Enter	To insert into or add to; commonly used in reference to plant-specific additions
Establish	To make arrangementss for a stated condition, for example, "establish communication with control room"
Evaluate	To examine and decide; commonly used in reference to plant conditions and operations
Equalize	To make the value of a given parameter equal to the value of another parameter

ENCLOSURE 3
(Page 2 of 3)

ACTION VERBS

Increase	Do not use because of oral communication problems
Initiate	To begin a process
Inspect	To measure, observe, or evaluate a feature or characteristic for comparison with specified limits; method of inspection should be included, for example, "visually inspect for leaks"
Load	To connect an electrical component or unit to a source of electrical energy, may involve a "start" in certain cases.
Lower	To decreasse, as in setpoint, flow, pressure, etc.
Maintain	To control a given plant parameter to some guideline requirement continuously
Minimize	To make as small as possible
Monitor	Similar to "check", except implies a continuous activity
Open	To change the physical position of a mechanical device, such as valve or door to the unobstructed position that permits access or flow, for example, "open valve IFP143"
Operate	To turn on or turn off as necessary to achieve the stated objective
Place	To move a control to a stated position
Place in Standby	To return a piece of equipment to an inactive status but ready for start on demand; commonly used to refer to a mid-position on a switch labeled AUTO
Raise	To increase, as in setpoint, flow, pressure, etc.
Record	To document specified condition or characteristic, for example, "record discharge pressure"
Reset	To remove an active output signal from a retentive logic device even with the input signal still present; commony used in reference to protection/safeguards logics in which the actuating signal is "locked-in". The reset allows equipment energized by the initial signal to be deenergized.

ENCLOSURE 3
(Page 3 of 3)

ACTION VERBS

Sample	To take a representative portion for the purpose of examination; commonly used to refer to chemical or radiological examination
Set	To physically adjust to a specified value an adjustable feature, for example, "set diesel speed to ...'rpm'"
Shut down	To deenergize equipment and place in standby
Start	To originate motion of an electric or mechanical device directly or by remote control, for example, "start...pump"
Stop	To terminate operation, for example, "stop...pump"
Throttle	To operate a valve in an intermediate position to obtain a certain flow rate, for example, "throttle valve V6550 to..."
Trip	To manually activate a semi-automatic feature, for example, "trip breaker..."
Vent	To permit a gas or liquid confined under pressure to escape at a vent, for example, "vent...pump"
Verify	To observe an expecteed condition or characteristic, for example, "verify discharge pressure is stable"

FINAL PAGE