

PROCEDURES GENERATION PACKAGE

ST. LUCIE PLANT

UNIT 1 AND UNIT 2

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## 1. INTRODUCTION

### 1.1 PURPOSE

The purpose of this Procedures Generation Package (PGP) is to describe the emergency operating procedures (EOPs) development at the St. Lucie Plant, Unit 1 and Unit 2 CE-type pressurized water reactor.

### 1.2 SCOPE

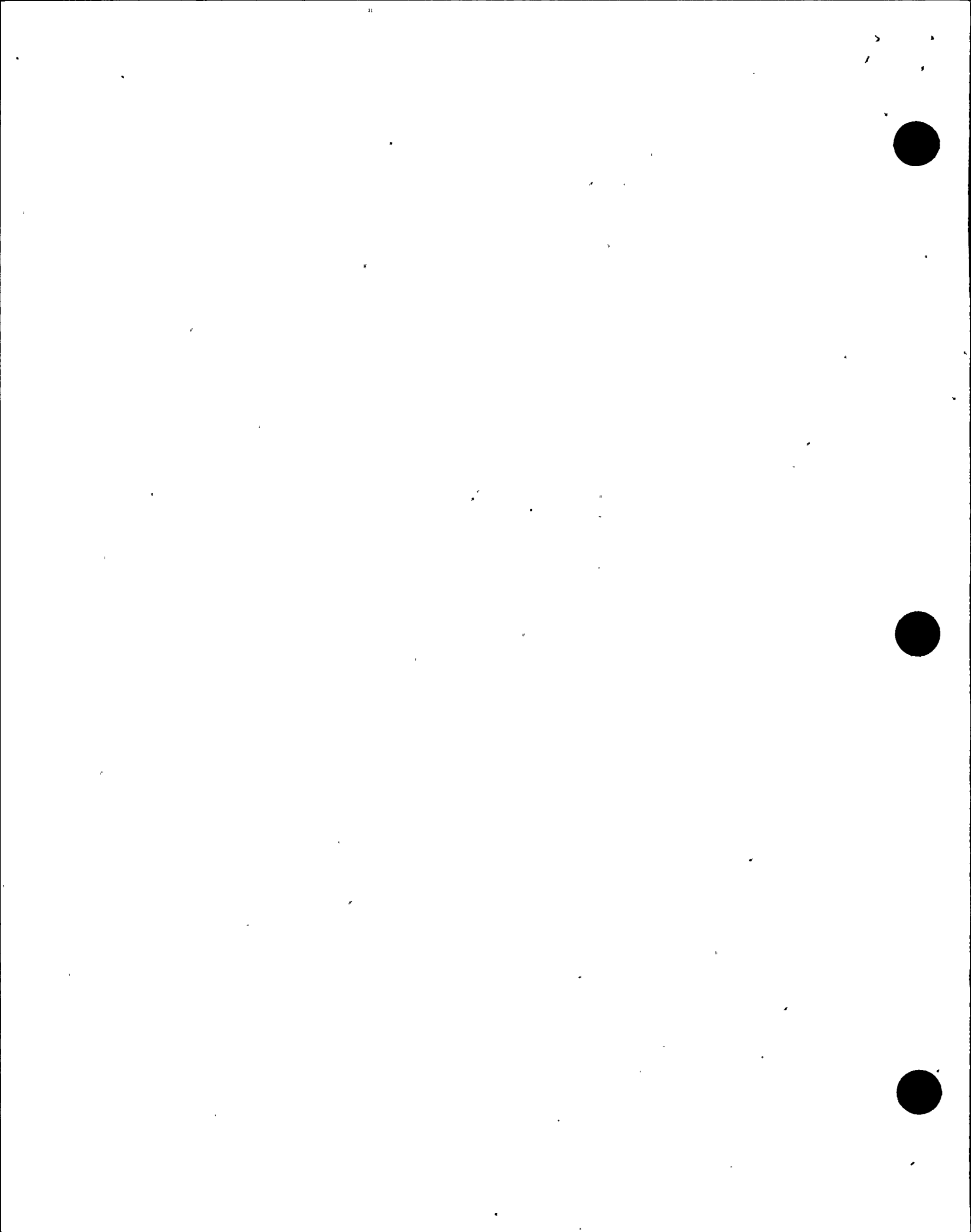
This document was developed in response to Supplement 1 to NUREG-0737, Item 7.2b), page 15.

### 1.3 ORGANIZATION

This document consists of the following six parts:

- o Introduction
- o Plant-Specific Technical Guidelines
- o Writers Guide for EOPs
- o EOP Verification Program
- o EOP Validation Program
- o EOP Training Program

Each part describes the approach taken as part of the overall EOP Implementation Plan for St. Lucie Plant, Unit 1 and Unit 2.



## 2. PLANT-SPECIFIC TECHNICAL GUIDELINES

### 2.1 GENERAL

The following program for converting the Combustion Engineering Emergency Procedure Guidelines (EPGs) into EOPs has been developed and will be used by St. Lucie Plant Unit 1 and Unit 2.

The latest approved revision to CEN 152 will be used for the initially implemented EOPs. As later revisions are approved, the revised information will be incorporated using the established revision, review, and approval process.

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

- o mechanics of conversion
- o location of the plant-specific technical information
- o how the plant-specific technical information will be used
- o the use of old EOPs
- o documentation requirements
- o use of the background information supplied with technical guidelines

### 2.2 PROGRAM DESCRIPTION

#### 2.2.1 Mechanics of Conversion

##### 2.2.1.1 Preparation

The designated EOP writing team will obtain and review the following plant-specific technical information (EOP source documents):

- o Combustion Engineering EPGs, Revision 1, with background information
- o FSAR Unit 1 and Unit 2
- o St. Lucie Plant Writers Guide for Emergency Operating Procedures (Rev. 2)
- o Technical Specifications for Unit 1 and Unit 2
- o the most current revision of existing EOPs
- o as-built plant drawings

The EOP source documents are located in the Document Control Center.



#### 2.2.1.2 Writing EOPs

The EOP writing team will follow the EPGs step-by-step, adding footnoted information where designated. Concurrently, the writers will review appropriate EOP source documents. The Plant-Specific Technical Guidelines (Figure 1) will be completed during the writing of the EOP. The justification section will be used to provide the plant-specific technical information or analysis to assist in the verification process.

#### 2.2.2 Documentation

The completed Figure 1 (Documentation Sheet) will be provided as a source document to assist in the EOP verification process and in the revision, review, and approval process.

An example of a completed "Step Documentation" sheet is presented as Figure 2, LOCA Procedure, Page 2 of 4, comparing it to the equivalent EPG Step of Page 5-72 Step 2a)

#### 2.2.3 Review

A review group will review all EOP drafts and Figure 1 to determine the applicability of the generic technical guidelines to the specific St. Lucie unit. This group will be composed of representatives of the I & C Department, Operations Department, Engineering & Human Factors, Technical Department, C.E. and other departments as the procedures require.

Safety significant deviations or additions to the generic guidelines will be addressed and resolved through the Technical Department.

A flow chart (Figure 3) depicts the EOP development and review path.

#### 2.2.4 Instrumentation and Controls Evaluation

Combustion Engineering will conduct a function/task analysis of CEN-152 for the C-E Owner's Group that will identify instrumentation and controls on a generic plant basis.



FPL shall conduct a function/task analysis using plant-specific technical guidelines (Completed Documentation Sheets, Figure 4, QI 5-PR/PSL-2) and completed Emergency Operating Procedures.

The master instrumentation and controls requirements list generated by the task analysis listed above will be included in the supplemental DCRDR Report.

**DOCUMENTATION SHEET**  
(PLANT-SPECIFIC TECHNICAL GUIDELINES)

EOP Title \_\_\_\_\_  
EOP Number \_\_\_\_\_  
Page \_\_\_\_\_

Rev. \_\_\_\_\_  
\_\_\_\_\_ of \_\_\_\_\_

STEP NUMBER	CEN 152	EOP	JUSTIFICATION OF DIFFERENCES	SIGNATURE/DATE

**DOCUMENTATION SHEET**  
(PLANT-SPECIFIC TECHNICAL GUIDELINES)

EOP Title  
EOP Number  
Page

XXXX	Rev. X
2	of 4

STEP NUMBER	CEN 152	EOP	JUSTIFICATION OF DIFFERENCES	SIGNATURE/DATE
EPG Pg. 5-72 STEP 2a	If pressurizer level is between [35"] and [245"].....	If pressurizer level is between 29% and 61 %....	Reworded to remove reference to level in inches. St Lucie Plant level instruments are calibrated in percentage.	S.A. DOE

# EOP DEVELOPMENT and REVIEW PATH

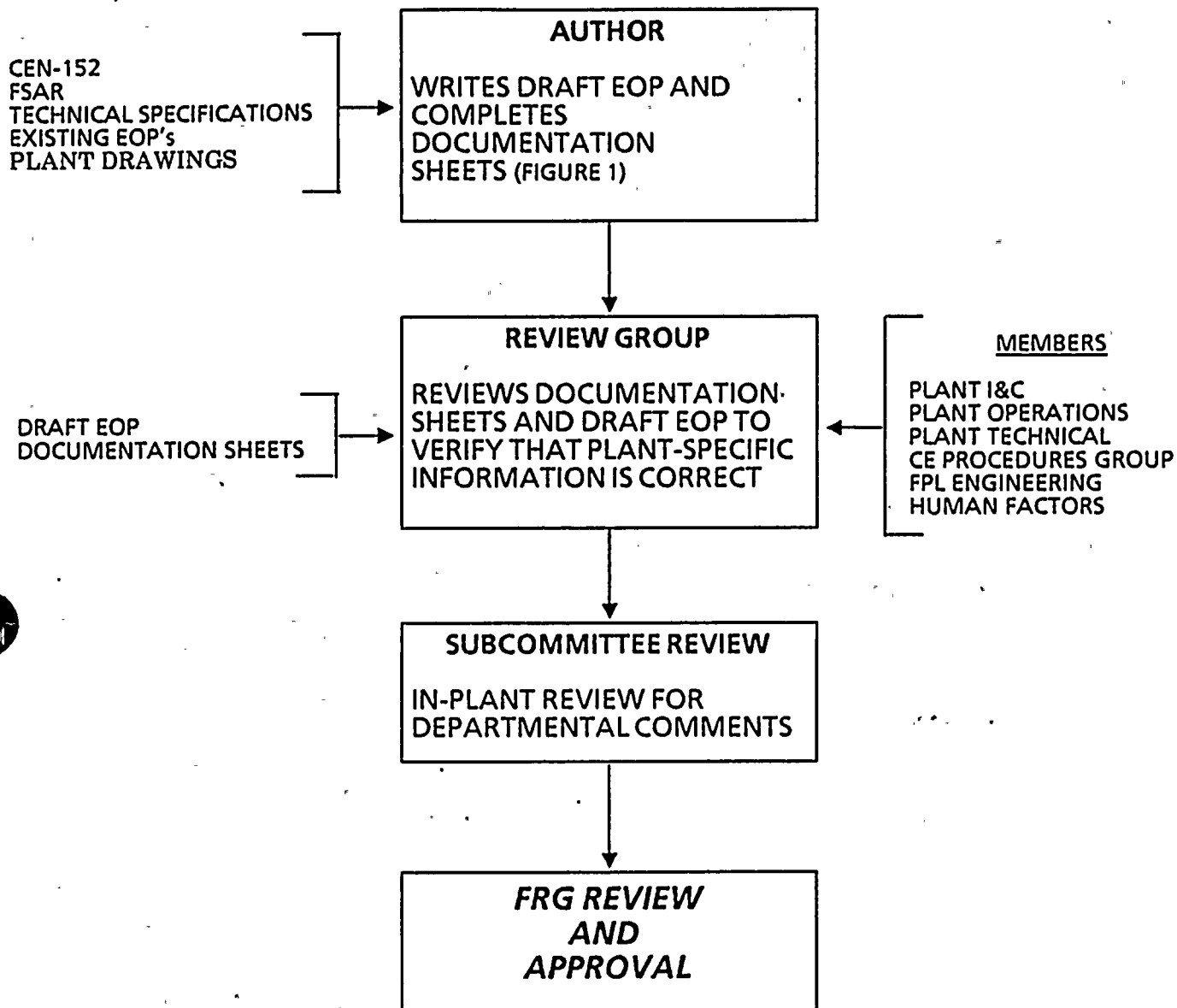


FIGURE 3

### 3. WRITERS GUIDE FOR EOPs

#### 3.1 GENERAL

A writers guide for EOPs is a plant-specific document that provides instructions for writing EOPs using good writing principles. 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.

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

#### 3.2 DOCUMENT DESCRIPTION

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

- o EOP format
- o EOP organization
- o EOP level of detail
- o role of the EOP within the procedure system and network
- o EOP content
- o mechanics of style

The St. Lucie Plant Writers Guide for Emergency Operating Procedures, Revision 2 is based on the industry document Emergency Operating Procedures Writing Guideline (INPO 82-017), developed by the Emergency Operating Procedures Implementation Assistance (EOPIA) Review Group and published by INPO. The St. Lucie Plant guide is provided as Attachment 1.

#### 4. 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

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

- o how EOP verification will be performed
- o how completion of the EOP verification process will be documented
- o what process will be used in resolving discrepancies

##### 4.3 OVERVIEW OF METHODS

All of the verification activities are "table top" activities. These activities involve comparing the emergency operating procedures with requirements identified in the reference documentation.

Verification of technical accuracy will be done by comparing each emergency operating procedure with the applicable generic and plant-specific technical guidelines, and with other source data such as technical specifications and Final Updated Safety Analysis Reports. A checklist will be used to ensure that key points of comparison are covered consistently.

Verification of written correctness will be done by reviewing each part of each emergency operating procedure against a checklist of criteria drawn from the Writer's Guide.

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.



The St. Lucie Plant verification procedure for emergency operating procedures shall address the following objectives:

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

## 5. 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 St. Lucie 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

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

- o how EOP validation will be performed
- o how to appropriately use simulators, walk-throughs, or table-top methods of validation
- o how operating and training experience will be integrated into the program evaluation
- o the evaluation criteria to be applied and the methods to be followed in resolving discrepancies
- o how completion of the EOP validation process will be documented

### 5.3 PROGRAM OVERVIEW

All St. Lucie Plant Emergency Operating Procedures shall be validated to ensure satisfaction of the validation objectives using the following methods: Table Top Reviews, Control Room walk throughs, and/or Simulator Exercises. All exercises will be performed to comply with minimum shift complement as specified in Technical Specifications. Figure 4 identifies how each method supports achievement of the validation objectives. Figure 4 also indicates how the meshing of the validation methods results in a procedure which can effectively mitigate emergency conditions. For instance, the table top activity combined with a control room walk-through results in a thorough evaluation of the clarity of EOP instructions.

#### 5.4 SCENARIOS

Scenarios shall be developed for each basic type of procedure i.e., LOCA, SGTR, Reactor Trip, etc. Criteria for selecting scenarios shall include, but not be limited to the objectives presented in Figure 4. Scenarios shall be developed for multiple failures both concurrent and sequential.

FIGURE 4

VALIDATION OBJECTIVES AND METHODS

<u>VALIDATION OBJECTIVE</u>	<u>VALIDATION METHOD</u>		
	TABLE TOP REVIEW	CONTROL ROOM WALK-THROUGH	SIMULATOR EXERCISE
Sufficient Information	Primary	X	---
Clear Instruction	Primary	X	---
Correct Sequences	---	Primary	X
Correct Timing	---	Partial	Primary
Effective Communications	---	X	X

NOTE: X = Provides Validation Input  
 Primary = Provides Primary Validation Input  
 Partial = Provides Partial Validation Input

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 St. Lucie Plant validation procedure for emergency operating procedures shall address the following objectives:

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

## 6. EMERGENCY OPERATING PROCEDURES TRAINING PROGRAM (EOPT)

### 6.1 GOALS

The EOPT will have as its basis the following goals:

- o To enable the operators to understand the structure of the EOPs.
- o To enable the operators to understand the technical basis of the EOPs.
- o To enable the operators to have a working knowledge of the technical content of the EOPs.
- o To enable the operator to be able to use the EOPs under operational conditions.
- o All licensed operators shall be trained on all EOPs prior to EOP Implementation.

Learning objectives will be developed to support each of these goals

### 6.2 TRAINING METHODS

The EOPT will utilize various combinations of classroom instruction, practice walk throughs, and simulator exercises as appropriate for the learning objectives.

#### 6.2.1 Classroom Instruction

Classroom instruction session will include information on the following:

- o Technical bases of the EOPs
- o Technical content of the EOPs
- o Structure of the EOPs

#### 6.2.2 Procedure Walk Throughs

Familiarity with procedural content, structure, and implementation will be gained by performing practice walk throughs in the control room.

All licensed operators shall walk through the Standard Post Trip Actions and the Functional Recovery Guidelines.

All licensed operators shall walk through the Optimal Recovery Guidelines. Two different scenarios shall be used to initiate the ORG.

Procedure walk throughs shall be conducted such that all licensed operators accomplish all steps.

### 6.2.3 Simulator Exercises

Simulator practice on performing EOPs will occur as a part of regularly scheduled simulator requalification or hot license training. Scenarios will be developed to be as specifically applicable as possible to the generic simulator now being used. Procedural practice will be structured such that operators are performing their normal control room functions. Until a plant specific simulator is available, complicated scenarios will be discussed during classroom instruction or control room walk throughs. Multiple scenarios shall be used to exercise the EOPs.

### 6.3 REFRESHER 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 the simulator. Simulator scenarios will be as described in 6.2.3 above. Simulator exercises will be evaluated by the Training staff or operations supervision. Evaluation results will be critiqued for feedback to the operators and to determine additional training needs.

### 6.4 TRAINING ON REVISIONS TO EOPs

Training on revisions to EOPs will be accomplished through a program of required readings (self taught), preshift briefings, or lectures in the requalification program. Determination of appropriate methods will be made by the training staff.

### 6.5 INPUTS INTO TRAINING PROGRAM CHANGES

#### 6.5.1 Supporting Training Material Changes

Changes to supporting training material will be factored into updated lesson plans and operator memos.

#### 6.5.2 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.

#### 6.6 EVALUATION

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