COMANCHE PEAK STEAM ELECTRIC STATION

OPERATIONS DEPARTMENT ADMINISTRATION MANUAL

FOR INFORMATION ONLY

PREPARATION OF EMERGENCY RESPONSE GUIDELINES

PROCEDURE NO. ODA - 204
REVISION NO. 2

SAFETY-RELATED

SUBMITTED BY _____ DATE 12/21/82
OPERATIONS SUPERINTENDENT

APPROVED BY _____ DATE 12-28-82
MANAGER, PLANT OPERATIONS

1.0 Purpose

This procedure describes the method used to develop Emergency Response Guidelines from the Generic Guidelines provided by Westinghouse. This procedure also prescribes the format in which the CPSES Emergency Response Guidelines (ERG) shall be prepared and provides guidelines regarding the scope and content of and the level of detail to be incorporated into each procedure.

2.0 Applicability

This procedure applies to the procedural set which provides guidance for responding to plant emergency conditions. This procedure becomes effective when issued.

3.0 Definitions

3.1 Emergency Response Guidelines (ERGs). The over all procedural set which provides guidance for response to plant emergency conditions. The procedural set is comprised of the following subsets:

- Emergency Operating Procedures (EOP)
- Emergency Operating Sub-Procedures (EOS)
- Emergency Contingency Actions (ECA)
- Function Restoration Guideline (FRS, FRP, FRC, FRI, FRH, FRZ)

3.2 Emergency Operating Procedures. The EOPs provide the operator with procedural guidance sufficient to effectively diagnose an event and directs the operator to a subprocedure or contingency procedure to recover the plant from nominal emergency conditions and return it to a known safe state from which repair or return to power can be accomplished.

3.3 Emergency Operating Sub-Procedures. The Emergency Operating Sub-Procedures provide guidance for the operator to recover the plant from a known event, condition or state.

3.4 Emergency Contingency Action Procedures. The Emergency Contingency Action procedures provide contingency actions for equipment failures and transitions to Function Restoration Guidelines when required.

3.5 Critical Safety Function Status Trees. Critical Safety function Status trees (CSFST) provide the operator with a systemmatic and explicit means for determining the status of a limited number of plant parameters which are directly related to maintaining the integrity of the classical

barriers to release of radioactivity, the fuel/fuel matrix, the reactor coolant system and the containment. Additionally, the CSFSTS prioritize and direct the operator to the appropriate Function Restoration Guideline.

3.6 Function Restoration Guidelines. Procedures designed to maintain the plant in a safe condition without regard to initiating events or failures subsequent to an event diagnosis. The function restoration procedures will restore critical safety functions to acceptable values and provide transitions to the appropriate EOP, EOS or ECA after the challenge to the safety function has been removed. The following six categories of Function Restoration Procedures are provided:

- Subcriticality (S-Series)
- RCS Integrity (P-Series)
- Core Cooling (C-Series)
- RCS Inventory (I-Series)
- Core Heat Sink (H-Series)
- Containment (Z-Series)

3.7 Issue Date - The issue date specifies when each CPSES Emergency Response Guideline becomes effective.

4.0 Instructions

4.1 Guidance on the use of Emergency Response Guidelines

4.1.1 General

A set of procedures shall be prepared which provide the operator with specific instructions to follow in the event of an alarm or upset condition. Collectively, this set of procedures will be sufficient to permit recovery for all upset conditions, whether or not the initiating event has been diagnosed. The set of procedures is composed of the following:

- Emergency Operating Procedures (EOP)
- Emergency Operating Sub-Procedures (EOS)
- Emergency Contingency Actions (ECA)
- Function Restoration (FRS, FRP, FRC, FRI, FRH, FRZ)

Figure 1 provides a pictorial representation of how these procedures are collectively used to restore the plant to safe conditions following an upset.

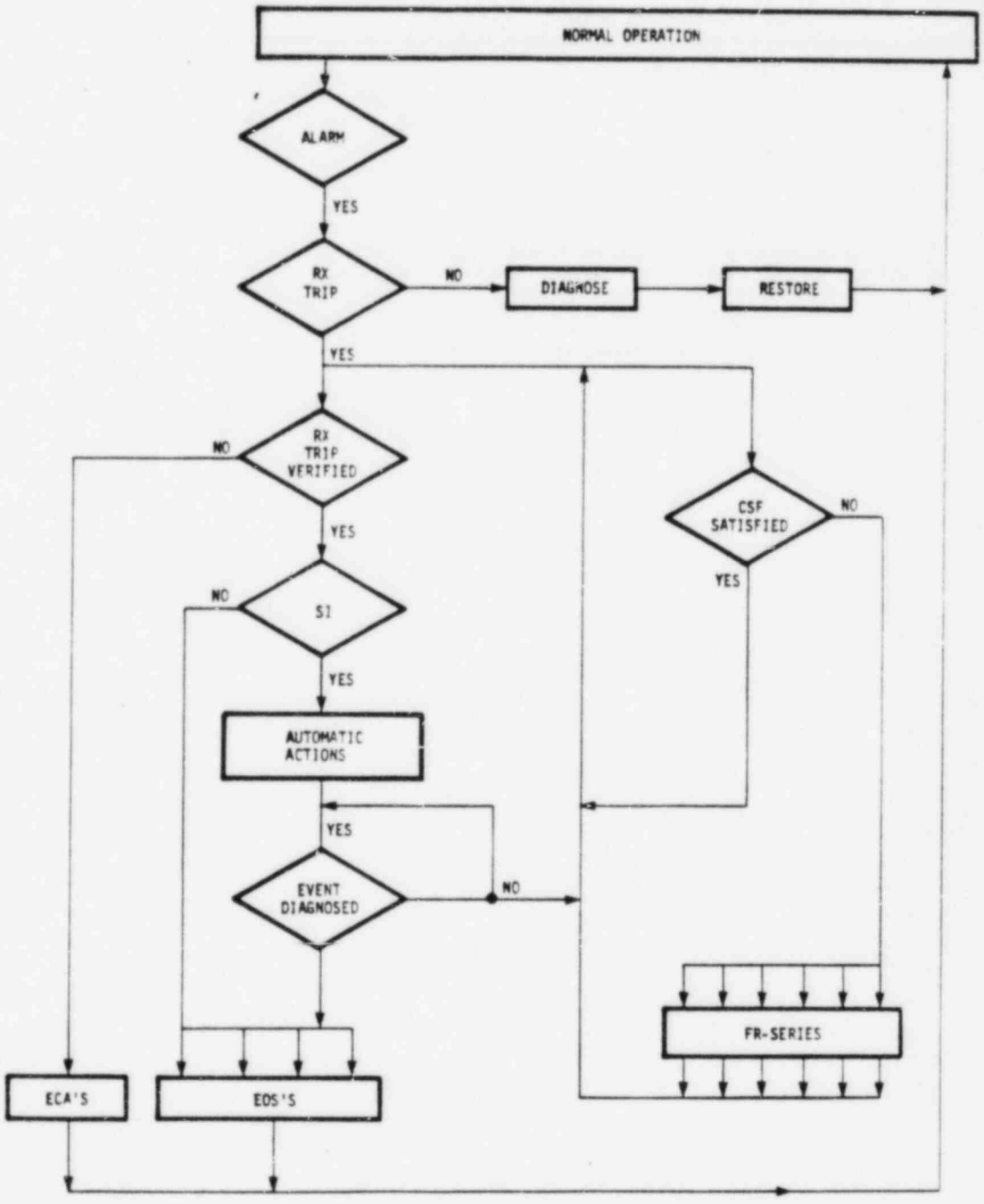


FIGURE 1

EMERGENCY RESPONSE GUIDELINES STRUCTURE

4.1.2 Emergency Operating Procedures

The Emergency Operating Procedures provide the operator with sufficient procedural guidance to diagnose nominal emergency conditions and direct the operator to the appropriate Emergency Operations Sub-Procedure or Emergency Contingency Action Procedure. The EOPs are initially entered to diagnose the initiating event. Concurrently, the critical safety function status trees should be monitored to ensure that specified parameters are in acceptable ranges. If the initiating event can be diagnosed, the EOP will direct the operator to enter an EOS procedure for recovery. If the event is not immediately diagnosed, the operator returns to the diagnostic steps in the EOP and repeats specified actions. As before, he concurrently monitors the critical safety function status trees. The ECA procedures provide instructions for contingency actions and will be entered as directed by the EOPs.

4.1.3 Critical Safety Function Status Trees

These status trees provide the operator with a systematic and explicit means for determining the safety status of his plant for any emergency situation, irrespective of the specific guidance intended for this purpose which is also contained in the Other Emergency Response Guidelines. The status trees can be referenced by the operator at any time, and continuous use of these status trees provides independent verification of the attainment and maintenance of safe plant conditions throughout the recovery. This concurrent use of status trees and the appropriate Emergency Response Guidelines also provides a method for identifying the mode of critical safety function challenge independent of specific event diagnoses and nominal prescribed recovery actions. Therefore, use of the status trees in conjunction with the Emergency Response Guidelines provides a systematic way of identifying and coping with subsequent/multiple failure situations.

The status trees are intended to serve two purposes:

1) general surveillance under all sets of unusual or abnormal conditions that can lead to or result from initiation of safety injection

2) direct operator guidance in those rare events that go beyond the design basis of the Engineered Safeguards Systems and the Emergency Response Guidelines and Emergency Contingency Actions.

It is anticipated that the "general surveillance" aspect of Critical Safety Function monitoring with the Status Trees would be carried out routinely by control room personnel not intimately involved in plant operations (typically, a Senior Reactor Operator in a supervisory role or a Shift Technical Advisor) during the period following activation of the Engineered Safeguards System and continuing until the plant status is fully diagnosed and understood by the operating personnel. The status trees are displayed on the control room Safety Assessment System (SAS) and should be continuously available. In the unlikely event that the SAS is inoperative during an accident, a manual back-up system shall be provided. In applications of this type, use of the Status Trees would serve as a prudent safeguard against an unrecognized degradation of an already abnormal situation by random or common mode failures of safety equipment or by operator error. No recourse by the operators to the Function Restoration Guidelines would be necessary. Prioritization of operator actions would be directed by existing Emergency Response Guidelines and Emergency Contingency Actions. However, the non-operating user of the Critical Safety Function Status Trees might well use the Function Restoration Guidelines and the prioritization guides incorporated in the Status Trees to verify that the course of action being followed by the operator is consistent with the status of the plant, in terms of Critical Safety Functions, as indicated by the Status Trees. The "direct operator guidance" aspect of Critical Safety Function monitoring with the Status Tree is expected to be applicable only in those very rare situations in which, as a result of multiple or sequential failures of several plant systems, an ongoing transient has entered a domain in which the Emergency Response Guidelines and Emergency Contingency Actions may not be reliable guides and available plant systems may have to be used under direct operator control to maintain the Critical Safety Functions and to protect the surviving barriers. Under these conditions an initial evaluation of the plant status in terms of the Critical Safety Functions is made and the rules of prioritization of operator response are invoked to direct the operators to the appropriate Function Restoration Guidelines in order to, at the minimum, stabilize and, if possible, improve the plant status. Thereafter, the plant status would be reevaluated periodically and as the set of status indicators changes to reflect changing plant status, the operator would be directed to other Function Restoration Guidelines or Emergency Response Guidelines to treat less serious challenges to barrier integrity or to respond to new challenges. Concurrently with these Critical Safety

Function oriented activities, it is expected that the operators would attempt by other methods to diagnose the plant status in terms of failed equipment and to initiate remedial measures.

4.1.4 Function Restoration Procedures

These procedures will provide operator actions which could be effective in responding to challenges to the plant critical safety functions. These guidelines are normally entered via the Critical Safety Function Status Trees, although in certain cases it is possible to enter them directly from the Emergency Response Guidelines via identified transitions that account for specific contingencies. These Function Restoration Guidelines provide guidance for maintaining the plant in a safe state without regard to initiating event or combinations of subsequent or consequential failures after event diagnosis. In most cases, the operator can expect to recover the plant using only the EOP's, EOS's or ECA procedures. However, the availability of the Function Restoration Guidelines provides additional guidance for situations where diagnosis cannot be made, or where subsequent/multiple failures make it impossible to recover the plant by use of the Emergency Operating Procedures.

4.2 Preparation of Plant Specific Technical Guidelines

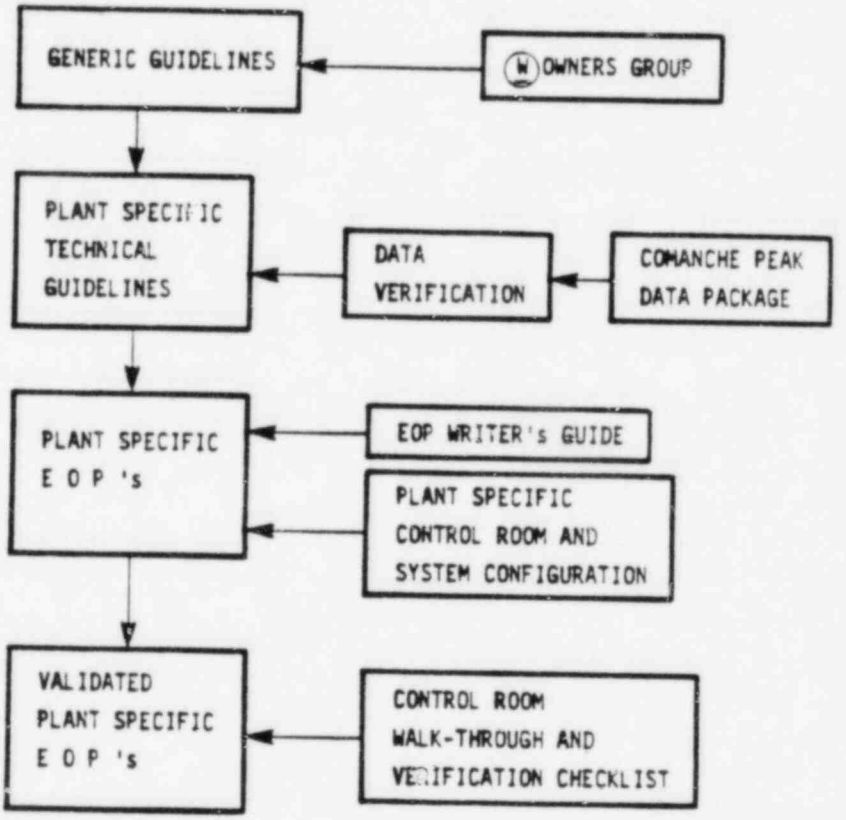
4.2.1 General

Generic technical guidelines have been prepared for all of the Emergency Response Guidelines. These generic guidelines provide a complete and documented analytical basis for each of the procedures. The below listed process is illustrated in figure 2 and will be used to make these guidelines applicable to Comanche Peak.

4.2.2 Development of Plant Specific Data

Each generic guideline shall be reviewed to determine which data must be made plant specific. This review shall be the basis for the development of a "Comanche Peak Data Package" for each guideline. Attachment 1 indicates the format for the Data Package.

FIGURE 2


GENERIC GUIDELINES
OWNERS GROUP
PLANT SPECIFIC TECHNICAL GUIDELINES
DATA VERIFICATION
COMANCHE PEAK DATA PACKAGE
PLANT SPECIFIC E O P 's
EOP WRITER's GUIDE
PLANT SPECIFIC CONTROL ROOM AND SYSTEM CONFIGURATION
VALIDATED PLANT SPECIFIC E O P 's
CONTROL ROOM WALK-THROUGH AND VERIFICATION CHECKLIST

4.2.3 Validation of the technical guidelines

The generic technical guidelines have been validated by the Westinghouse Owner's Group. This validation applies also to the Comanche Peak Technical Guidelines since only plant specific data has been inserted and no substantial changes have been made to the basic guideline. In order to ensure that the validation process is not compromised, the person responsible for inserting plant specific data shall determine the effect, if any, on the validation. This determination shall be documented on Attachment 1.

4.2.4 Documentation

The Plant Specific Technical Guidelines contain the following elements:

- o Generic Technical Guidelines
- o Comanche Peak Data Package
- o Verification that Plant Specific Data does not alter the Generic Analysis

Together, these documents provide a complete and documented plant specific analytical basis for each guideline

4.2.5 Instructions for Completing the Comanche Peak Data Package

4.2.5.1 Cover Page

4.2.5.1.1 Title - as indicated in Attachment 1
4.2.5.1.2 Guideline No. - Enter the Generic Guideline No.
4.2.5.1.3 Revision No. - Enter the Generic Guideline Revision Date
4.2.5.1.4 Enter the noun name of the Guideline e.g. Reactor trip or Safety Injection
4.2.5.1.5 Submitted By - Signature of submitter and submittal date
4.2.5.1.6 Approval by - Signature of approver and approval date

4.2.5.2 Second Page

4.2.5.2.1 Heading - as indicated on Attachment 1
4.2.5.2.2 Guideline Name - Enter noun name
4.2.5.2.3 Plant Specific Revision No. - Enter revision number of the Comanche Peak ERG that is supported by this data package
4.2.5.2.4 Generic Guideline Revision Date - Enter date listed on Generic Guideline

4.2.5.2.5 Guideline No. - Enter Comanche Peak Guideline No.

4.2.5.2.6 Page No. - Enter data package page number as part of the entire data package

4.2.5.2.7 Step 1 - Enter the total number of pages of data entered and provide any comments necessary to support the entry of data. The signature block shall contain the signature of the responsible engineer entering the data. A space has been provided for the engineer's printed name.

4.2.5.2.8 Step 2 - Enter the total number of pages of data verified and provide a brief description of the verification process. The signature block shall contain the signature of the responsible engineer verifying the data. A space has been provided for the engineer's printed name.

4.2.5.3 Data Pages

4.2.5.3.1 Header data - Same as section 4.2.5.2

4.2.5.3.2 Guideline Step No. - Enter the step number requiring Comanche Peak specific data.

4.2.5.3.3 Plant Specific Data Required - Enter the Plant Specific data.

4.2.5.3.4 Source/Justification/Calculation - Enter the source of the data (PSAR, component technical manual, Technical Specifications, etc.) along with necessary justification or calculations.

4.2.6 Incorporation of changes

Periodically, the generic guidelines may be changed or new guidelines added. When this occurs, revised generic guidelines will be reviewed and plant specific data entered, as appropriate. The same documentation process will be used. New guidelines will be treated in accordance with steps 4.2.1 through 4.2.5 of this procedure and reference 5.3.

4.3 Preparation of Emergency Operating, Emergency Operating Sub-Procedures, Emergency Contingency Action and Function Restoration Procedures

The Emergency Operating, Emergency Operating Sub-Procedures, Emergency Contingency Action and Function Restoration procedures will be prepared using the plant specific technical guideline as the technical basis for the procedure. Attachment 2 provides instructions for translating this technical information into a procedure acceptable for use in the control room.

4.4 Verification of Emergency Response Guidelines

Each procedure shall be verified to ensure the procedure is accurate and useable. The verification process will normally be a control- room walk-through to ensure technical adequacy as well as usability (human factors). The check list shown in Attachment 3 will be used to document this verification. The check list will be filed with the Comanche Peak Data Package for each procedure.

4.5 Operator Training Criteria

The plant operators (RO and SRO) will receive training on the Emergency Response Program and on each procedure. The training will provide a mechanism to ensure that each operator understands the fundamental concepts with symptom based procedures. Additionally, the training will be structural to ensure that the operators become familiar with each of the procedures and will provide a mechanism for feedback to incorporate procedure improvements. The training will be a combination of classroom lectures, self study and control room walk-throughs of the actual procedures. Attachment #4 is the form used for incorporating procedural improvements identified through the training program.

5.0 References

5.1 CPSES Operations Administrative Control and Quality Assurance Plan.
5.2 ANSI N18.7-1976, "Administrative Controls and Quality Assurance for the Operational Phase of Nuclear Power Plants."
5.3 STA - 202, "Preparation, Review, Approval and Revision of Station Procedures."
5.4 ODA - 201, "Preparation of Integrated Plant Operating Procedures."
5.5 ODA - 202, "Preparation of System Operating Procedures."
5.6 NUREG - 0899, Guidelines for the preparation of Emergency Operating Procedures.

6.0 Attachments

6.1 Attachment 1, Comanche Peak Data Package
6.2 Attachment 2, Writer's Guide
6.3 Attachment 3, Procedure Verification Checklist
6.4 Attachment 4, Procedure Improvement Recommendations

ATTACHMENT 1
PAGE 1 OF 3

COMANCHE PEAK STEAM ELECTRIC STATION

EMERGENCY RESPONSE GUIDELINE DATA PACKAGE

DATA PACKAGE
(4.2.5.1.1)

GUIDELINE NO. (4.2.5.1.2)
REVISION DATE (4.2.5.1.3)
NAME (4.2.5.1.4)

SUBMITTED BY (4.2.5.1.5) DATE _____
OPERATIONS SUPERINTENDENT

APPROVED BY (4.2.5.1.6) DATE _____
MANAGER, PLANT OPERATIONS

ATTACHMENT 1
PAGE 2 OF 3

CPSES EMERGENCY RESPONSE GUIDELINE DATA PACKAGE	PLANT SPECIFIC REVISION NO. (4.2.5.2.3)	GUIDELINE NO. ODA - 204 (4.2.5.2.5)
GUIDELINE NAME: (4.2.5.2.2)	REVISION DATE (4.2.5.2.4)	Page of (4.2.5.2.6)

1. Data on pages 3 through _____ of this data package has been made specific to the Comanche Peak design and does not compromise the generic technical basis for this guideline.

   Comments:

(4.2.5.2.7)

Signature date

Print name of Engineer entering data

2. Data on pages 3 through _____ of this data package has been verified as specific to the Comanche Peak design and does not compromise the generic technical basis for this guideline.

   Comments/brief description of verification process:

(4.2.5.2.8)

Signature date

Print name of Engineer verifying data

ATTACHMENT 1
PAGE 3 OF 3

CPSES EMERGENCY RESPONSE GUIDELINE DATA PACKAGE	PLANT SPECIFIC REVISION NO.	GUIDELINE NO. ODA - 204
GUIDELINE NAME:	REVISION DATE	Page of

Guideline Step No.	Plant Specific Data Required	Source/Justification/Calculations
(4.2.5.3.2)	(4.2.5.3.3)	(4.2.5.3.4)

ATTACHMENT 2
PAGE 1 OF 27

COMANCHE PEAK STEAM ELECTRIC STATION
EMERGENCY RESPONSE GUIDELINES
WRITER'S GUIDE

ATTACHMENT 2
PAGE 2 OF 27

TABLE OF CONTENTS

ATTACHMENT 2
PAGE 3 OF 27

TABLE OF CONTENTS (continued)

ATTACHMENT 2
PAGE 4 OF 27

1.0 INTRODUCTION

Emergency Response Guidelines (ERGs) are plant procedures that direct actions necessary to mitigate the consequences of transients and accidents that cause plant parameters to exceed reactor protection system set points or engineered safety feature set points. The ERGs will provide the operator guidance on how to verify the adequacy of critical safety functions and restore and maintain those functions when degraded. The ERGs will be written so that the operator need not diagnose an event, such as a small break LOCA, in order to maintain the plant in a safe configuration. Generic Technical guidelines supplied by the Westinghouse Owners' Group have been made plant specific for Comanche Peak and will provide the technical basis for the development of the Comanche Peak ERGs.

Technical guidelines represent the translation of engineering data derived from calculations, computer modeling, and plant-specific information (i.e. FSAR, Technical Specification, etc.) into information presented as guidance for development of detailed, plant-specific ERGs. These technical guidelines will provide plant specific information such as inventory control and containment integrity, delineating the entry conditions to be used in the ERGs. The technical guidelines will provide step-by-step information for transition from emergency conditions to a safe, stable condition, such as cold shutdown. ERGs must be written to provide detailed, plant specific instructions to implement each step in the technical guidelines.

1.1 Purpose

This document provides administrative and technical guidance to be followed when writing ERGs.

1.2 Scope

This writers guide applies to the writing of all emergency response guidelines (ERGs).

2.0 ERG DESIGNATION AND NUMBERING

ERGs are procedures that govern plant operation during emergency conditions and specify operator actions to be taken to return the plant to a known, stable condition.

Each procedure shall be uniquely identified. This identification permits easy administration of the process of procedure preparation, review, revision and distribution. Unique identification also facilitates ease of use by operations personnel.

ATTACHMENT 2
PAGE 5 OF 27

2.1 Procedure Designation

Designation of the Emergency Response Guidelines shall be as follows:

2.1.1 Emergency Operating Procedure (EOP)
2.1.2 Emergency Operating Sub-procedure (EOS)
2.1.3 Emergency Contingency Actions (ECA)
2.1.4 Function Restoration Guidelines (FR)

2.2 Procedure Numbering

A unique number will follow the procedures designation and will consist of two digits spaced by a period.

Examples: EOP - 0.0

unique identification number

procedure designator

EOS - 0.1

unique identification number

procedure designator

The unique number generally will correspond to the number assigned to the technical guideline from which the procedure is prepared.

2.3 Revision Numbering and Identification

Revisions to ERGs will be accomplished in accordance with STA - 202, "Preparation, Review, Approval and Revision of Station Procedures."

3.0 FORMAT

3.1 Title Page

Each ERG shall have a title page (Figure 1). The primary purposes of the title page are to identify the procedure and the authorized revision.

ATTACHMENT 2
PAGE 6 OF 27

The title page shall contain the following information:

3.1.1 A title descriptive of the emergency condition to which the procedure applies
3.1.2 The procedure designation and number
3.1.3 The procedure revision number
3.1.4 The submitter's signature and the date of submittal
3.1.5 The approver's signature and the date of approval.

3.2 Administrative Note Page

This page is used to identify those administrative tasks that must be performed prior to issuing the procedure (Figure 2). Examples of Administrative Notes are as follows:

3.2.1 "Identification numbers for steps 1, 2 and 3 shall be circled with black ink."
3.2.2 "Vertical lines for the table on Attachment 1 must be hand drawn."
3.2.3 "Greater-than symbols for parameter 1 of symptom set I and III of Attachment 1 must be hand drawn."
3.2.4 "Figure 1 shall be printed on the reverse of page 2 of 12."

ATTACHMENT 2
PAGE 7 OF 27

COMANCHE PEAK STEAM ELECTRIC STATION

EMERGENCY RESPONSE GUIDELINES

3.1.1

3.1.2
3.1.3

SUBMITTED BY _____ DATE _____
3.1.4

APPROVED BY _____ DATE _____
3.1.5

FIGURE 1

ATTACHMENT 2
PAGE 8 OF 27

The Administrative note page shall contain a statement that indicates it is not to be issued with the procedure.

3.3 First Page of Each Procedure

The first page of each procedure shall contain the purpose statement and symptoms for entry into the procedure, as applicable per the latest revision of the Westinghouse Owners Group generic guideline. Figure 3 is an example of a typical procedure first page.

3.4 Remaining Procedure Pages

A two column format for the remaining pages of the procedure shall be used (Figure 4). The left hand column is designated for operator action or expected response to automatic actions. The right hand column is designated "response not obtained" and lists contingency actions for the operator to take when the expected response is not obtained.

3.4.1 With the exception of the title page and the attachments, each page of an Emergency Response Guideline shall contain the following information in the title block at the top of that page (Figure 4).

3.4.1.1 Title
3.4.1.2 Issue date
3.4.1.3 Procedure identifying number
3.4.1.4 Procedure Revision number
3.4.1.5 Page number as part of the entire procedure, including its attachments.

ATTACHMENT 2
PAGE 9 OF 27

Procedure No.
Revision No.

NOTES:

1. The following administrative items must be complete prior to issuing this procedure.

   a. Identification, numbers for Steps 1 through 17 shall be circled with black ink.

   b. Place keeping aids (boxes, approximately 3/8" square) shall be hand drawn at the conclusion of each "circled" step.

   c. Bullets "o" shall be "colored" in with black ink.

   d. Foldout step 4 - Table must be hand drawn, also greater thans for 1200°F and 700°F.

2. Upon completion of the above items, the procedure, less this sheet, is ready to be issued.

FIGURE 2

ATTACHMENT 2
PAGE 10 OF 27

CPSES EMERGENCY RESPONSE GUIDELINE	ISSUE DATE	PROCEDURE NO. EDP - 0.0
REACTOR TRIP OR SAFETY INJECTION	REVISION NO. 0	Page 2 of 14

STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED

A. PURPOSE:

The purpose of this procedure is to verify proper response of automatic protection systems following automatic actuation of a REACTOR TRIP or SAFETY INJECTION; and to assess plant conditions and identify the appropriate recovery procedure to be used.

B. SYMPTOMS:

I. Reactor Trip:

a. Any First-Out annunciator lit.
b. Rapid decrease in neutron flux level
c. All rod bottom lights lit and rods on the bottom
d. Reactor trip breakers open
e. Rapid decrease in unit load to 0 Power.

II. Safety Injection:

a. Safety Injection annunciator lit.
b. ECCS pumps running
c. ESF status panel indications

FIGURE 3

ATTACHMENT 2
PAGE 11 OF 27

CPSES EMERGENCY RESPONSE GUIDELINE	ISSUE DATE	PROCEDURE NO. EOF - 0.0
REACTOR TRIP OR SAFETY INJECTION	REVISION NO. 0	Page 3 of 14

STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED
	NOTE: Circled numbers show IMMEDIATE ACTION steps	
	NOTE: Foldout page should be open (Attachment 1).	
(1)	Verify Reactor Trip:	
	a. All rod bottom lights - LIT	a. Manually trip reactor. IF reactor will NOT trip, THEN go to ECA - 1.0 ANTICIPATED TRANSIENT WITHOUT TRIP.
	b. All rod position indicators - ZERO	
☐	c. Neutron flux - DECREASING	
(2)	Verify Turbine Trip:	
	a. All turbine stop valves - CLOSED	a. Manually trip turbine. IF the turbine will NOT trip, THEN either stop the EHC pumps OR trip the turbine via the Local Trip Valve located at the hydraulic control rack.
☐		
(3)	Verify AC Emergency Buses Energized: • AC emergency bus voltage - NORMAL	IF NOT energized, THEN go to ECA - 2.0, LOSS OF ALL AC POWER, STEP 3.
☐		
(4)	Check If SI is Initiated:	IF NOT initiated, THEN go to TOS - 0.1, REACTOR TRIP RECOVERY.
	a. Receipt of an "S" signal as indicated on the ESF Status Panel AND actuation of the following safeguards equipment: • CC Pumps - RUNNING • SI Pumps - RUNNING • RHR Pumps - RUNNING • CS Pumps - RUNNING • FCU Pumps - RUNNING • SFP Pumps - RUNNING • Motor-driven AFW Pumps RUNNING • Emergency Diesel Generators - RUNNING	
☐		

FIGURE 4

ATTACHMENT 2
PAGE 12 OF 27

3.5 Attachments

Attachments to Emergency Response Guidelines shall be minimized; however, there are cases where attachments may be necessary. The attachments should contain information pertinent to accomplish certain functions in the procedure. Fold-out pages will be attachments. Other Attachments might be steps necessary to start a reactor coolant pump.

3.5.1 Attachments to Emergency Response Guidelines shall contain identifying information at the top of each page as follows (see Figure 5):

3.5.1.1 Attachment Number
3.5.1.2 Attachment Page Number as part of the entire attachment
3.5.1.3 Procedure identifying number
3.5.1.4 Procedure revision number
3.5.1.5 Procedure page number as part of the entire procedure, including its attachments

3.5.2 The "foldout" page shall always be the last attachment and shall have a color coded tab for rapid identification.

ATTACHMENT 2
PAGE 13 OF 27

Attachment 1
Page 1 of 1
Procedure No. EOP - 0.0
Revision No. 0
Page 14 of 14

REACTOR TRIP OR SAFETY INJECTION

1. RCP TRIP CRITERIA
   - o Trip any RCP if component cooling water to that pump is lost and upper or lower bearing temperature is greater than 200°F.
   - o Trip all RCPs if BOTH conditions listed below are met:
     a. SI is ON.
     b. RCS pressure - EQUAL TO OR LESS THAN (later) PSIG.

2. SI TERMINATION CRITERIA FOR SPURIOUS SI
   a. Terminate SI when ALL parameters listed below are met:
      (1) Containment Conditions - NORMAL
      (2) RCS Pressure - GREATER THAN 2000 PSIG
      (3) RCS Subcooling - (later)°F
      (4) Pressurizer Level - GREATER THAN 25%
      (5) Heat Sink:
          (a) SG Level - GREATER THAN 60%

          -OR-

          (b) AFW Flow - GREATER THAN 878 GPM

3. SI REINITIATION CRITERIA FOLLOWING SPURIOUS SI
   a. Reinitiate SI if ANY ONE of the parameters listed below occurs:
      (1) RCS Pressure - LESS THAN 1785 PSIG
      (2) RCS Subcooling - LESS THAN (later)°F
      (3) Pressurizer Level - LESS THAN 10%

4. SYMPTOMS FOR FRC - 0.1, RESPONSE TO INADEQUATE CORE COOLING
   Go to FRC - 0.1, RESPONSE TO INADEQUATE CORE COOLING when ALL symptoms in ANY ONE of the following symptom sets occur:

PARAMETER:	SYMPTOM SET		
	I	II	III
1. TCs	>1200 °F	-	>700°F
2. Containment Condition	-	ABNORMAL	ABNORMAL
3. RCP Status	-	ANY ON	ALL OFF

5. SYMPTOMS FOR FRH - 0.1, RESPONSE TO LOSS OF SECONDARY HEAT SINK
   Go to FRH - 0.1 RESPONSE TO LOSS OF SECONDARY HEAT SINK, if AFW Flow is NOT AVAILABLE.

6. Reference procedure No. EPP-201, ACCESSMENT OF EMERGENCY ACTION LEVELS AND PLAN ACTIVIATION, to determine if this event is covered by the emergency plan.

FIGURE 5

ATTACHMENT 2
PAGE 14 OF 27

3.6 Procedure Organization

The following section headings will be used for all ERGs:

3.6.1 PURPOSE -- Brief statement of the purpose of the specific procedure.

3.6.2 SYMPTOMS -- The entry conditions or symptoms requiring the use of the procedure. The list will contain only those alarms, indications operating conditions, automatic system actions or other unique symptoms that the operator is to use in deciding to use the procedure.

3.6.3 ACTION/EXPECTED RESPONSE and RESPONSE NOT OBTAINED -- The operator actions will be short, concise, identifiable instructions that give appropriate directions to the user.

3.7 Section and Instruction Step Numbering

3.7.1 The PURPOSE and SYMPTOMS sections shall be identified as sections A and B respectively (see Figure 3)

3.7.2 An alpha-numeric system will be used for numbering steps in the ACTION/EXPECTED RESPONSE and RESPONSE NOT OBTAINED sections as follows:

1. Verify .....

    a. All .....

        1) Start .....

            o CCP Running

When steps are identified by a number or letter they must be followed in sequence. When bullets "o" are used, they may be performed in any order.

4.0 WRITING INSTRUCTION STEPS

4.1 Instruction Step Length and Content

Instruction steps will be concise and precise. Conciseness denotes brevity; preciseness means exactly defined. Thus, instructions should be short and exact. This is easily stated, but not so easily achieved. General rules to be used in meeting objectives are as follows:

4.1.1 Instruction steps should deal with only one idea.

4.1.2 Short, simple sentences should be used in preference to long, compound, or complex sentences.

4.1.3 Complex evolutions should be prescribed in a series of steps, with each step made as simple as practicable.

4.1.4 Objects of operator actions should be specifically stated. This includes identification of exactly what is to be done and to what.

4.1.5 Limits should be expressed quantitatively whenever possible.

4.1.6 Mandatory sequence of steps is assumed unless the steps are identified by bullets "o".

4.1.7 Identification of components and parts should be complete.

4.1.8 Instruction content should be written to communicate to the user.

4.1.9 Expected results of routine tasks need not be stated.

4.1.10 When actions are required based upon receipt of an annunciated alarm, list the setpoint of the alarm for ease of verification.

4.1.11 When requiring resetting or restoration of an alarm or trip, list the expected results immediately following the resetting or restoration if it would be beneficial to the operator.

4.1.12 When considered beneficial to the user for proper understanding and performance, describe the system response time associated with performance of the instruction.

4.1.13 When system response dictates a time frame within which the instruction must be accomplished, prescribe such time frame. If possible, however, avoid using time to initiate operator actions. Operator actions should be related to plant parameters.

4.1.14 When anticipated system response may adversely affect instrument indications, describe the conditions that will likely introduce instrument error and means of determining if instrument error has occurred by using a NOTE.

4.1.15 When additional confirmation of system response is considered necessary, prescribe the backup readings to be made.

4.2 Action/Expected Response Column

The left-hand column of the dual-column format will contain operator action steps and expected response steps. The following rules are established for this column, in addition to the general rules above.

4.2.1 Expected indications should be presented in this column.

4.2.2 Operator actions in this column should be appropriate for the expected indications.

4.3 Response Not Obtained Column

Contingency actions (expected response not obtained) will be presented in the right-hand column of the dual-column format. Contingency actions are operator actions that should be taken in the event a stated condition, event, or task does not represent or achieve the expected result. The need for contingency action occurs in conjunction with tasks involving verification, observation, confirmation, and monitoring.

Contingency actions will be specified for each circumstance in which the expected results or actions might not be achieved. The contingency actions should identify, as appropriate, directions to override automatic controls and to initiate manually what is normally automatically initiated.

4.4 Use of Logic Terms

The logic terms AND, OR, NOT, IF, IF NOT, WHEN, and THEN are often necessary to describe precisely a set of conditions or sequence of actions. When logic statements are used, logic terms will be highlighted so that all the conditions are clear to the operator. Emphasis will be achieved by using capitalization and underlining. All letters of the logic terms shall be capitalized and the words will be underlined.

The use of AND and OR within the same action shall be avoided. When AND and OR are used together, the logic can be very ambiguous.

The dual-column format used equates to the logic, IF NOT the action in the left-hand column, THEN follow the action specified in the right-hand column; for example: IF RCS press. below 1536 psig, THEN verify SI pump flowmeters.

Use other logic terms as follows:

4.4.1 When attention should be called to combinations of conditions, the word AND shall be placed between the description of each condition. The word AND shall not be used to join more than three conditions. If four or more conditions need to be joined, a list format shall be used.

4.4.2 The word OR shall be used when calling attention to alternative combinations of conditions. The use of the word OR shall always be in the inclusive sense. To specify the exclusive "OR," the following may be used: "either A OR B but not both."

4.4.3 When action steps are contingent upon certain conditions or combinations of conditions, the step shall begin with the words IF or WHEN followed by a description of the condition or conditions (the antecedent), a comma, the word THEN, followed by the action to be taken (the consequent). WHEN is used for an expected condition. IF is used for an unexpected but possible condition.

4.4.4 Use of IF NOT should be limited to those cases in which the operator must respond to the second of two possible conditions. IF should be used to specify the first condition.

4.4.5 THEN shall not be used at the end of an action step to instruct the operator to perform the next step because it runs actions together.

4.5 Use of Cautions and Notes

Cautionary information can be considered in two fundamental categories: those that apply to the entire procedure and those that apply to a portion or a specific step of the procedure. Those that apply to the entire procedure are called "PRECAUTIONS" and are covered in operator training. Those that apply to a portion of a procedure are called "CAUTIONS" and are placed immediately before the procedural steps to which they apply.

Cautions shall extend across the entire page and shall be highlighted as shown in the Example CAUTION. This placement of cautions helps ensure that the procedure user observes the caution before performing the step. A caution cannot be used instead of an instructional step. It should be used to denote a potential hazard to equipment or personnel associated with or consequent to the subsequent instructional step.

If additional information other than cautions is necessary to support an action instruction, a NOTE should be used. A NOTE should present information only, not instructions. Notes will extend across the page.

4.1.1 The following examples illustrate these instructions.

4.5.1.1 Example NOTE:

NOTE: Circled numbers show IMMEDIATE ACTION steps.

4.5.1.2 Example CAUTION:

```
* * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *
*                                                                       *
*  CAUTION:  Do not throttle AFW flow until level is above the          *
*            top of the U-tubes.                                        *
*                                                                       *
* * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *
```

4.6 Calculations

Mathematical calculations should be avoided in ERGs. If a value has to be determined in order to perform a procedural step, a chart or graph should be used whenever possible.

4.7 Use of Underlining

Underlining will be used for emphasis of logic terms NOTE and CAUTION.

ATTACHMENT 2
PAGE 18 OF 27

4.8 Referencing Among and Between Procedures

Referencing implies that an additional procedure or additional step will be used as a supplement to the procedure presently being used. Referencing other steps within the procedure being used, either future steps or completed steps, should be minimized. When only a few steps are involved in referencing, the steps should be stated in the procedure wherever they are needed.

To minimize potential operator confusion, branching will be used when the operator is to leave one procedure or step and use another procedure or step. Use the key words "go to." Therefore, the operator will know to leave the present step and not return until directed.

Use quotation marks to emphasize the title of the referenced or branched procedure; examples: Go to EOS - 0.1, REACTOR TRIP RECOVERY." Go to Step 20.

When cross referencing is unavoidable, appropriate place keeping aids shall be incorporated. See section 4.11.

4.9 Component Identification

With respect to identification of components, the following rules are to be followed:

4.9.1 Equipment, controls, and displays will be identified in operator language (common usage) terms. These terms will generally match engraved names on panels.

4.9.2 When the engraved names and numbers on panel placards and alarm windows are specifically the item of concern in the procedure, the engraving should be quoted verbatim and emphasized by using all capitals.

4.9.3 The names of plant system titles are emphasized by initial capitalization. When the word "system" is deleted from the title because of brevity and is understood because of the context, the title is also emphasized by initial capitalization.

4.9.4 If the component is seldom used or it is felt that the component would be difficult to find, location information should be given in parentheses following the identification.

ATTACHMENT 2
PAGE 19 OF 27

4.10 Level of Detail

Too much detail in ERGs should be avoided in the interest of being able to effectively execute the instructions in a timely manner. The level of detail required is the detail that a newly trained and licensed operator would desire during an emergency condition.

To assist in determining the level of EOP detail, the following general rules apply.

4.10.1 For each control that is provided for infrequent or abnormal operation, with a number engraved on the control panel placard, the number should be included in parentheses within the instructional step. Indication for Controls provided for normal plant operation will not generally be listed in the ERGs.

4.10.2 For control circuitry that executes an entire function upon actuation of the control switch, the action verb appropriate to the component suffices without further amplification of how to manipulate the control device; for example, "SI PMPS SUCTION FROM RWST, (69/1-8806) - OPEN." Recommended action verbs are as follows:

4.10.2.1 For power-driven rotating equipment, use Start, Stop.
4.10.2.2 For valves, use Open, Close, Throttle Open, Throttle Close, Throttle.
4.10.2.3 For power distribution breakers, use Synchronize and Close, Trip

4.10.3 For control switches with a positional placement that establishes a specified readiness condition, the verb "Place" should be used along with the engraved name of the desired position; For example, "Place the Steam Dump Interlock Selector Switch in the "BYP INTLK" position.

4.10.4 Standard practices for observing for abnormal results need not be prescribed within procedural steps. For example, observation of noise, vibration, erratic flow, or discharge pressure need not be specified by steps that start pumps.

4.11 Operator Aids

When information is presented using graphs, charts, tables, and figures, these aids must be self-explanatory, legible, and readable under the expected conditions of use and within the reading precision of the operator.

4.11.1 Units of Measure

Units of measure on figures, tables, and attachments should be given for numerical values that represent observed, measurement data, or calculated results. A slant line should be used instead of "per"; examples: ft/sec, lbs/hr.

4.11.2 Titles and Headings

Capitalization should be used for references to tables and figures, titles of tables and figures within text material, column headings within a table.

Examples: Refer to figure 1 for ....
... as shown in Table 2, Equipment Power Supplies, the ....

4.11.3 Figure, Table, and Attachment Numbering

Sequential arabic numbers should be assigned to figures, tables, and attachments in separate series. The sequence should correspond with the order of their reference in the text. The symbol "#" and abbreviation "No." are unnecessary and should not be used. The number alone suffices.

Examples: Figure 1, Figure 2, etc.
Table 1, Table 2, etc.
Attachment 1, Attachment 2, etc.

4.11.4 Place Keeping Aids

Place keeping aids should be used when it is determined to be helpful to ensure that procedural steps are completed or when cross referencing is required.

4.11.4.1 Place keeping aids shall be provided for immediate action steps. This aid will consist of a check-off block (about 3/8" square) at the completion of the immediate action step.

4.11.4.2 Place keeping aids for use during cross referencing will be provided for the control room copy of the ERG manual. This aid will be attached to the binder, and will be used as a marker during transitions from one procedure to another.

5.0 MECHANICS OF STYLE

5.1 Spelling

Spelling should be consistent with modern usage. When a choice of spelling is offered by a dictionary, the first spelling should be used.

ATTACHMENT 2
PAGE 21 OF 27

5.2 Hyphenation

Hyphens are used between elements of a compound word when usage calls for it. The following rules should be followed for hyphenation.

5.2.1 When doubt exists, the compound word should be restructured to avoid hyphenation.

5.2.2 Hyphens should be used in the following circumstances:

5.2.2.1 in compound numerals from twenty-one to ninety-nine; example:
one hundred thirty-four

5.2.2.2 in fractions; examples: one-half, two-thirds

5.2.2.3 in compounds with "self"; examples: self-contained, self-lubricated

5.2.2.4 when the last letter of the first word is the same vowel as the first letter of the second word--as an alternative, two words may be used; example: fire-escape or fire escape

5.2.2.5 when misleading or awkward consonants would result by joining the words; example: bell-like

5.2.2.6 to avoid confusion with another word; examples: re-cover to prevent confusion with recover, pre-position to avoid confusion with preposition

5.2.2.7 when a letter is linked with a noun; examples: X-ray, O-ring, U-bolt, I-beam

5.2.2.8 to separate chemical elements and their atomic weight; examples: Uranium-235, U-235

5.3 Punctuation

Punctuation should be used only as necessary to aid reading and prevent misunderstanding. Word order should be selected to require a minimum of punctuation. When extensive punctuation is necessary for clarity, the sentence should be rewritten and possibly made into several sentences. Punctuation should be in accordance with the following rules.

5.3.1 Brackets
Do not use brackets.

5.3.2 Colon Use a colon to indicate that a list of items is to follow, for example: Restore cooling flow as follows:

5.3.3 Comma
Use of many commas is a sign the instruction is too complex and needs to be rewritten. Therefore, evaluate the number of commas to ensure the instruction is not too complex.

Use a comma after conditional phrases for clarity and ease of reading. Example: WHEN level decreases to 60 inches, THEN start pump . . . .

5.3.4 Parentheses
Parentheses shall be used to indicate alternative items in a procedure, instruction, or equipment numbers.

5.3.5 Period
Use a period at the end of complete sentences and for indicating the decimal place in numbers.

5.4 Vocabulary

Words used in procedures should convey precise understanding to the trained person. The following rules apply.

5.4.1 Use simple words. Simple words are usually short words of few syllables. Simple words are generally common words.

5.4.2 Use common usage if it make the procedure easier to understand.

5.4.3 Use words that are concrete rather than vague, specific rather than general, familiar rather than formal, precise rather than blanket.

5.4.4 Define key words that may be understood in more than one sense.

5.4.5 Verbs with specific meaning should be used. Examples are listed in Table 1.

5.4.6 Equipment status should be denoted as follows:

5.4.6.1 Operable/operability -- These words mean that a system, subsystem, train, component, or device is capable of performing its specified function(s) in the intended manner. Implicit in this definition is the assumption that all necessary attendant instrumentation, controls, normal and emergency electrical power sources, cooling or seal water, lubrication or other auxiliary equipment required for the system, subsystem, train, component, or device to perform its function(s) are also capable of performing related support function(s).

ATTACHMENT 2
PAGE 23 OF 27

Table 1. Action Verbs

Verb	Application
Allow	To permit a stated condition to be achieved prior to proceeding, for example, "allow discharge pressure to stabilize"
Check	To perform a comparison with a procedural requirement "Check if SI can be terminated"
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 valves ZL-2462A"
Complete	To accomplish specified procedural requirements.
Decrease	Do not use because of oral communication problems.
Establish	To make arrangements for a stated condition, for example, "establish communication with control room"
Increase	Do not use because of oral communication problems.
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"
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 ZL-2459A"
Record	To document specified condition or characteristic, for example, "record discharge pressure"
Set	To physically adjust to a specified value an adjustable feature, for example, "set diesel speed to ... 'rpm'"
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 ZL-2461A to ..."

ATTACHMENT 2
PAGE 24 OF 27

Table 1. Action Verbs (continued)

Verb	Application
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 ... pump"
Verify	To observe an expected condition or characteristic, for example, "verify discharge pressure is stable"

5.4.6.2 Operating -- This word means that a system, subsystem, train, component, or device is in operation and is performing its specified function(s), and that "clearances" or other conditions do not prevent it from maintaining that service.

5.4.6.3 Available -- This word means that a system, subsystem, train, component, or device is operable and can be used as desired; however, it need not be operating.

5.5 Numerical Values

The use of numerical values should be consistent with the following rules:

5.5.1 Arabic numberals should be used.

5.5.2 For numbers less than unity, the decimal point should be preceded by a zero; for example: 0.1.

5.5.3 The number of significant digits should be equal to the number of significant digits available from the display and the reading precision of the operator.

5.5.4 Acceptance values should be specified in such a way that addition and subtraction by the user is avoided if possible. This can generally be done by stating acceptance values as limits. Examples: 510°F maximum, 300 psig minimum, 580° to 600°F. For calibration points, statement of the midpoint and its lower and upper limits for each data cell would accomplish the same purpose; for example, 10 milliamperes (9.5 to 10.5). Avoid using ±.

5.5.5 Engineering units should always be specified for numerical values of process variables. They should be the same as those used on the control room displays, for example: psig instead of psi.

5.6 Abbreviations, Letter Symbols, and Acronyms

5.6.1 The use of abbreviations should be minimized because they may be confusing to those who are not thoroughly familiar with them. Abbreviations may be used where necessary to save time and space, and when their meaning is unquestionably clear to the intended reader. The full meaning of the abbreviation should be written in after the first us of the abbreviation and whenever in doubt. Consistency should be maintained throughout the procedure.

5.6.2 Capitalization of abbreviations should be uniform. If the abbreviation is comprised of lowercase letters, it should appear in lowercase in a title or heading. The period should be omitted in abbreviations except in cases where the omission would result in confusion.

5.6.3 Letter symbols may be used to represent operations, quantities, elements, relations, and qualities.

5.6.4 An acronym is a type of symbol formed by the initial letter or letters of each of the successive parts or major parts of a compound term.

5.6.5 Abbreviations, symbols, and acronyms should not be overused. Their use should be for the benefit of the reader. They can be beneficial by saving reading time, ensuring clarity when space is limited, and communications mathematic ideas.

5.6.6 Only those abbreviations, symbols and acronyms that are listed in the Comanche Peak standard list may be used in the ERGs.

6 TYPING FORMAT

6.1 General Typing Instructions

For emergency operating procedures, the following general requirements are to be followed:

6.1.1 Paper size should be 8-1/2 x 11 inches.

6.1.2 White, bond paper with printed border should be used.

6.1.3 Procedures are to be typed on an electric typewriter.

6.1.4 Modern, pitch 12, typewriter element is to be used.

ATTACHMENT 2
PAGE 26 OF 27

6.2 Page Arrangement

6.2.1 Page margins are specified by the printed borders. Two type spaces are to be maintained between the text and borders.

6.2.2 Page identification information will be in accordance with Section 3.0.

6.2.3 The 8-1/2 inch edges shall constitute top and bottom of pages and text. Tables and figures shall be readable with the page so arranged. Rotation of printed matter should be avoided for emergency operating procedures.

6.3 Breaking of Words

Breaking of words shall be avoided to facilitate operator reading.

6.4 Printed Operator Aids

6.4.1 Figures include graphs, drawings, diagrams, and illustrations. The following rules are established.

6.4.1.1 The figure number and its title are placed three line spaces below the figure field.

6.4.1.2 The figure number and title should be of modern type, pitch 12.

6.4.1.3 The figure field must not violate specified page margins.

6.4.1.4 The figure field should be of sufficient size to offer good readability.

6.4.1.5 The essential message should be clear; simple presentations are preferred.

6.4.1.6 Grid lines of graphs should be at least 1/8-inch apart; numbered grid lines should be bolder than unnumbered grid lines.

6.4.1.7 Labeling of items within the figure should be accompanied by arrows pointing to the item.

6.4.1.8 The items within the figure should be oriented naturally insofar as possible. For example, height on a graph should be along the vertical axis.

ATTACHMENT 2
PAGE 27 OF 27

6.4.1.9 In general, items within the figure should be labeled. Typed labels should use modern type, pitch 12. Handwritten labels should be printed, using all capitals, with letters and numbers at least 1/8-inch high.

6.4.1.10 All lines in figures should be reproducible.

6.5.2 Tables should be typed using the following rules.

6.5.2.1 Type style and size should be the same as that for the rest of the procedure.

6.5.2.2 The table number and title should be located above the table field and three line spaces below preceding text.

6.5.2.3 A heading should be entered for each column and centered within the column; the first letter of words in the column headings should be capitalized.

6.5.2.4 Horizontal lines should be placed above and below the column headings; vertical lines, while desirable, are not necessary or required.

6.5 Use of Foldout Pages

When used, a foldout page is treated as a single page. It should follow the same format as a standard page except the width is different. The page should be folded so that a small margin exists between the fold and the right-hand edge of standard pages. This will reduce wear of the fold.

6.6 Use of Oversized Pages

Oversize pages should not be used. They should be reorganized or reduced to a standard page. If this cannot be done, a foldout page should be used.

6.7 Use of Reduced Pages

Reduced pages should be avoided whenever possible. Final size of reduced pages should be standard page size. Reduced pages should be readable.

7 REPRODUCTION

Reproduction will be done on a standard copier, single-sided copy only. The exception is when a figure or graph is to be printed in the reverse of a preceeding page.

ATTACHMENT 3
PAGE 1 OF 2

CPSES EMERGENCY RESPONSE GUIDELINE VERIFICATION CHECKLIST	DATE:	Page 1 of 2
GUIDELINE NAME:	ERG NO.:	ERG REV NO.:

This checklist shall be used to establish the accuracy of information and instructional steps of the ERGs, to determine that the procedures can be accurately and efficiently carried out, and to demonstrate that the procedures are adequate to mitigate the consequences of transients and accidents. The verification may be accomplished by simulator exercises, control room walk-throughs or Desk top reviews. Any one, combinations or all methods may be used. Indicate the method(s) used below.

[ ] Simulator Exercising

[ ] Control Room Walkthrough

[ ] Desk top review

Criteria	Reviewer /date
1. The ERG accurately reflects the information presented in the technical guidelines.	/
2. The ERG is written in accordance with the writer's guide.	/
3. The ERG has been walked through the control room and can be followed without confusion, delays or errors.	/
4. Controls, equipment and indications that are referenced in the ERG are available in the plant, use the same designation, use the same units, and operate (or will operate) as specified in the procedure.	/
5. The level of detail is sufficient to allow the least qualified operator on the shift crew to use it effectively.	/

ATTACHMENT 3
PAGE 2 OF 2

CPSES EMERGENCY RESPONSE GUIDELINE VERIFICATION CHECKLIST	DATE:	Page 2 of 2
GUIDELINE NAME:	ERG NO.:	ERG REV NO.:

6. The minimum shift crew can complete the ERG without outside assistance. _____ /

7. The ERG has been verified against the Emergency Response Guideline Transition Flow Chart. _____ /

Comments:

_____ /

Comment Resolution:

_____ /

CHECKLIST REVIEWED (OPERATIONS SUPERINTENDENT)

_____ /

ATTACHMENT 4
PAGE 1 OF 1

CPSES EMERGENCY RESPONSE GUIDELINE IMPROVEMENT RECOMMENDATION	DATE:	Page 1 of 1
ERG NAME:	ERG NO.:	ERG REV NO.:

1. The following change(s) are recommended to improve the Comanche Peak ERGs:

2. Justification/Reason for Change:

Name of person recommending change

3. Evaluation (incorporate/do not incorporate) and Justification:

Operations Engineer