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Technical Procedure Writer's Guide

Cognizant Section: Document Services

Approved By: _____

Cognizant Department: Controller

Approved By: _____



TABLE OF CONTENTS

1.0	INTRODUCTION.....	4
2.0	FORMAT	4
2.1	Procedure Titles.....	4
2.2	Section Headings.....	5
2.3	Letter Font and Style.....	5
2.4	Page Margins	5
2.5	Tab Settings.....	6
2.6	Step Numbering	6
2.7	Emphasis	6
2.8	Title Page.....	6
2.9	Second Page Header.....	6
2.10	Table of Contents.....	7
2.11	Place-keeping Aids	7
2.12	Grammar	7
2.13	Step Sign-offs	7
2.14	Hold, Witness, and Independent Verification Points.....	8
2.15	Attachment Format.....	8
2.16	Warnings, Cautions, and Notes	8
2.17	Figures and Tables	10
3.0	WRITING ACTION STEPS.....	10
3.1	Standard Action Steps	10
3.2	Writing Conditional Action Steps	11
3.3	Writing Logic Steps.....	12
3.4	Non-sequential Action Steps.....	13
3.5	Alternative Action Steps.....	13
3.6	Time-Dependent Action Steps	13
3.7	Concurrent Action Steps	13
3.8	Continuous Action Steps.....	14
3.9	Repeated Action Steps	14
3.10	Action Steps Containing Verifications	15
3.11	Action Steps to Branch or Reference Elsewhere	15
3.12	Action Steps with Acceptance Criteria	16
4.0	SECTIONS	17
4.1	Introduction	17
4.2	Reference Documents	17
4.3	Equipment List	17
4.4	Precautions and Limitations.....	18
4.5	Prerequisite Actions.....	19
4.6	Performance.....	19
4.7	Attachments	19

	5.0	EMERGENCY AND ALARM RESPONSE PROCEDURES	19
	5.1	Entry Conditions.....	19
11/7/95	5.2	Alarm/Initiating Device	20
	5.3	Automatic Actions	20
	5.4	Immediate Actions.....	21
	5.5	Subsequent Actions	21
	5.6	Possible Causes	21
	5.7	Corrective Actions.....	21
	5.8	Exit Conditions	21
		Appendix 1 - Sample Procedure.....	23
11/7/95		Appendix 2 - Sample Alarm Response Procedure	31
5/7/96		Attachment 3 - Verb Usage	35

1.0 INTRODUCTION

7/24/96

The purpose of this writer's guide is to establish the format and style to be used in writing Technical Procedures. A technical procedure is required when a defined task or activity is to be performed, which meets one of the following criteria: (1) accomplishes work or activities defined in the WID QAPD or creates quality records, (2) provides specific direction for operating equipment and/or systems included in the configuration management process, (3) provides specific direction for physical activities that require repeatability and documented results.

For example:

Environmental sampling operations

Hazardous waste packaging/handling

Maintenance of equipment

The following types of procedures are developed using this format:

Technical Procedures - prescribe precisely how to accomplish the various technical tasks associated with starting up, testing, operating, and maintenance of WID equipment and systems. These procedures specify fixed tasks and define activities in a way that ensures these operations are safe, efficient, and practiced within the appropriate margins of safety.

Emergency and Alarm Response Procedures - define the action steps to take when an abnormal condition exists. Emergency procedures address conditions that require immediate and absolute attention to mitigate problems, reestablish safety boundaries, and bring operations and equipment back within established operating parameters. Alarm response procedures address the actions to be performed in response to annunciators and other types of facility displays that indicate an abnormal condition.

Note: The basic steps for developing a procedure can be found in DOE-STD-1029-92, DOE Writer's Guide for Technical Procedures.

Note: A sample procedure has been added to this guide, to give a visual sample to aid the writers.

2.0 FORMAT

2.1 Procedure Titles

Write procedure titles that are concise, clear, and descriptive of the system, equipment, process, or activity. Avoid the use of the word procedure in the title. Do not spell out acronyms in procedure titles.

2.2 Section Headings

Break the text of the procedure into sections by grouping related action steps or related functions. Headings perform the following functions:

Help users locate information in the procedure.

Break up long series of actions into manageable segments.

Track progress through the procedure, especially when branching to other sections.

Give each major activity in the main body of the procedure a unique and descriptive heading.

Major sections have all letters uppercase and bold (i.e., **INTRODUCTION, PERFORMANCE**).

Primary sections have all letters uppercase (i.e., DEVELOPING THE SCHEDULE). Primary sections organize activities.

Secondary sections are initial caps (i.e., Develop Schedule). Secondary sections organize action steps.

2.3 Letter Font and Style

The font and style normally to be used in the body of the procedure is Arial 12

2.4 Page Margins

Portrait-oriented page margins are as follows:

0.5 inch top margin

0.5 inch bottom margin

1.0 inch left margin

1.0 inch right margin

Landscape-oriented page margins are as follows:

1.0 inch top margin

0.5 inch bottom margin

1.0 inch left margin

0.5 inch right margin

2.5 Tab Settings

Tab Settings are as follows:

1.0 inch 1.4 inch 1.7 inch 1.9 inch 2.1 inch 2.5 inch 3.0 inch

2.6 Step Numbering

Step numbering is as follows:

1.0 Primary section or first level action step

1.1 Secondary section or second level action step

1.1.1 Third level action step

[A] Fourth level action step

2.7 Emphasis

Emphasize information that if overlooked or misinterpreted, could result in user error. Use upper case and bolding to emphasize important information, unless directed otherwise in this document.

2.8 Title Page

The title page is the first page of a procedure and contains the following information about the procedure:

Type of procedure

Number, revision, and draft level of document when being developed

Title

Effective date

Approval signature

Reviewer Organization

2.9 Second Page Header

A one-line header contained in a table cell defined as one column and one row, will be printed on the second and all subsequent pages, containing the following information:

(Flush left) procedure number
(Centered) revision number and draft level during development

(Flush right) page numbering (i.e., Page 1 of 1).

2.10 Table of Contents

The table of contents helps users locate the portions of the procedure they need for a specific operation. The use of a table of contents should be done on a graded approach based on the following criteria:

The number of subsections in the performance section that can be performed independently

The length of the procedure

Required entries in the table of contents are:

Section headings

Subsection headings in the Performance Section

Attachments

2.11 Place-keeping Aids

Place-keeping aids used in procedures help the user keep track of completed actions in a procedure. They are composed of brackets [] located at the left margin on the same line as the action step number. They will be used when the procedure contains sign-offs, directs the user to other procedures, or when the procedure will be performed over several shifts.

2.12 Grammar

The Gregg Reference Manual is the standard to be used for capitalization, punctuation, and hyphenation (do not use hyphens to break words at the end of a line). Spell out acronyms, abbreviations, symbols, units, and terms not found in Webster's Dictionary, or not normally used by the action performer during first usage in the performance section of the procedure.

2.13 Step Sign-offs

Sign-offs are used to document the performance of significant steps in the procedure. Step sign-offs are designated by the words **SIGN-OFF** located two lines down from text and one tab in from the left margin. Step sign-offs are performed by placing the user's initials in the corresponding block in the

attachment, then completing the Signature Block, which consists of the user's printed name, signature, and initials.

2.14 Hold, Witness, and Independent Verification Points

Outline Hold, Witness, and Independent Verification points in a dotted box (single row, single column table). Extend the box from left margin to right margin.

The type of point is placed two lines before text and one tab in from the left margin.

The step is followed by the words Sign-off located two lines down from text and one tab in from the left margin.

State in the sign-off the responsible organization(QA, WHO, Safety, etc.), when the organization is different from the cognizant organization.

Multiple sequential points of the same type may be placed in a single box, with independent sign-offs in the attachment for each step.

2.15 Attachment Format

Locate the attachment number and title one line below the page header on the left margin.

Place the attachment title on the same line as the attachment number separated by a space, a hyphen, and a space (i.e., Attachment 1 - Electronic Symbols).

Locate the attachment page number on the last line of the page, flush right to the margin with the word "Page" followed by the page number of the attachment (not the procedure page number) and the total number of pages of the attachment (i.e., Page 1 of 1).

2.16 Warnings, Cautions, and Notes

Note: Do not place action statements in Warnings, Cautions, or Notes.

WARNINGS attract attention to specific personnel hazards and contain information that is essential to safe performance. Warnings may include conditions, design limitations, practices, and procedures to be complied with to avoid loss of life, personal injury, or health hazards.

Outline warning statements in a single thick-lined box (single row, single column table). Extend the warning box from left margin to right margin.

Leave one blank line above and below the warning box.

Boldface, capitalize, and center the word `warning` inside the box above the text.

Separate the word `warning` from the warning text with one blank line.

Left/right indent the text of the warning.

Place warnings immediately before and on the same page as the related step (regardless of page length).

Place warnings prior to cautions and notes when a step has both warnings and cautions or notes.

State specific steps to which the warning applies, if the warning applies to more than one step.

CAUTIONS attract attention to specific equipment or environmental hazards.

Outline caution statements in a double-lined box (single row, single column table). Extend the caution box from left to right margin.

Boldface, capitalize, and center the word `caution` inside the box above the text.

Separate the word `caution` from the caution text with one blank line.

Left/right indent the text of the caution.

Place cautions immediately before and on the same page as the related step (regardless of page length).

Place cautions prior to notes when a step has both cautions and notes.

Leave one blank line above and below the caution box.

State specific steps to which the caution applies, if the caution applies to more than one step.

NOTES call attention to important supplemental information. The information may be a reminder of preparatory information needed to perform the activities of a step.

Outline notes in a single-lined box (single row, single column table) with no right or left lines. Extend the box from left to right margin.

Boldface, capitalize, and center the word `note` inside the box above the text.

Indent the text of the note.

Place the note either before or after the applicable step, depending on when the user needs the information.

State specific steps to which the note applies, if the note applies to more than one step.

2.17 Figures and Tables

Figures and Tables may be used in the body of the procedure at the applicable step, or may be grouped in an attachment. The determination for use is based on complexity of the procedure, or to increase user friendliness.

Number and title a figure/table as follows:

Use initial caps for the figure/table number and title.

Center the figure/table number and title on a line or lines as needed above the top of the figure/table.

Single space between the last line of the title and the top line of the figure/table.

Separate the word Figure/Table and the title of the figure/table with a period at the end of the figure number (e.g., Figure 1. Designated Parking Areas).

3.0 WRITING ACTION STEPS

Note: In many requirement documents, required actions are expressed by using "shall" in declarative sentences (for example, "The manager shall approve the completed work order" or "Approved storage shall be provided for classified documents"). The words "will," "should," and "must" are similarly used. Action steps in WID procedures use Imperative sentences (commands) instead of declarative sentences (for example, "Manager, approve completed work order" or "Provide approved storage for classified documents").

3.1 Standard Action Steps

The basic element of an action step is an imperative sentence, a command to perform a specific action. An action step answers the question, "What is to be done?" Write each action step to direct the user to perform a single action.

Start the step with a singular present-tense action verb.

Describe the direct object of the verb.

Initially refer to instruments and components using both the equipment name and number. After the initial reference, write equipment names exactly as the equipment is labeled.

If the equipment is not labeled within the facility, use equipment nomenclature precisely as it appears in the documentation.

Complete the step with supportive information about the verb and the direct object. Supportive information includes further description of the object or the recipient of the object.

Write steps using words that are easily understood by the intended users.

Break one subsection into two or more subsections to simplify the step structure if necessary. Use main steps to allow users to quickly comprehend the purpose of the step. Use substeps to provide specific details for performance. Both main steps and substeps use the same basic format.

If someone other than the cognizant user is responsible for performing a step, identify the person (by position) to perform the step.

Include articles (a, an, the) when referring to a general item; omit articles when referring to specific items (for example, change "Open the door," to "Open door SB-9").

Present action steps, including associated action substeps and lists, with a minimum of interruption (for example, page breaks).

3.2 Writing Conditional Action Steps

Two types of conditional steps are generally needed in a procedure:

A step where the action depends on an unexpected but possible condition (if clause).

A step where the action depends on an expected condition (when clause).

Describe the condition first ("IF" or "WHEN" clause) and then the action to be taken. The "IF" or "WHEN" clause is followed by a comma. Conditional action steps that are not critical are written as follows:

1.1 If stock tank is full, close valve.

Conditional action steps that are critical are written with the action introduced

with the word **THEN** on the next line emphasized. Critical action steps are written as follows:

1.1 **IF** RAD tank is full,
THEN close valve.

3.3 Writing Logic Steps

When multiple conditions are required to be evaluated, these are considered logic steps. The logic terms **AND**, and **OR** are used in conjunction with a conditional step to indicate a choice needs to be made.

If two conditions are required, and both of these conditions must be met, place the logic term **AND** between the conditions. Begin a new line with **THEN** followed by the action.

If two conditions are involved, and one of the conditions must be met before the action is taken, place the logic term **OR** between the conditions. Begin a new line with **THEN** followed by the action.

If three or more conditions are described, use a list format as follows:

1.1 **IF** Rad tank meets **TWO** of the following conditions:

3/4 full

Alarming

Isolated

THEN perform any **ONE** of the following:

Close valve A

Close valve B

Secure pump PMP-1

Avoid using the logic term **AND** with the logic term **OR** on the same line of a conditional statement. Write the conditional statement using only one logic term on a line. Start a new line for each additional logic term used.

1.1 **IF** Rad tank is 3/4 full **AND** isolated,
OR alarming,
THEN open valve A.

Use only **AND** and **OR** to join conditions that include both a subject and a predicate. If two subjects apply to the same predicate (for example, "IF temperature and pressure are stable, ... ") or one subject takes two predicates (for example, "IF level is stable or falling, ... ") use the unemphasized conjunctions "and" or "or" rather than the emphasized logic terms.

Avoid using **not** if a single word can be used and the condition can be stated in a positive manner.

3.4 Non-sequential Action Steps

Identify that a series of steps may be performed non-sequentially by placing a note before the sequence of steps that can be performed non-sequentially or bullets may also be used to indicate non-sequential steps.

3.5 Alternative Action Steps

Alternative action steps are used when it is beneficial for users to be provided with more than one option. It is important to ensure that only one alternative is performed.

Present alternative actions as items in a list within a single step.

Use the word **one** to introduce the list of alternatives (for example, "Perform **ONE** of the following actions").

3.6 Time-Dependent Action Steps

Some action steps contain actions that impose time requirements on the user by specifying the duration of actions or actions that must be completed within a specific period of time.

Place a note before the steps to be timed to alert the user.

Begin the steps with instructions for the user to record critical time information and provide the user with a place to record this information. Typically this information will be the time that "starts the clock," and the time by which some action must be completed.

Include guidance to identify the actions to take in the event that the time-dependent step can not be performed within the specified time.

A note advising of time-dependent actions and instructions to record the time is not required when the time requirement is an inherent part of the step.

3.7 Concurrent Action Steps

Concurrent action steps contain actions that must be performed at the same time. For example, two actions may have to be performed simultaneously or two performers may have to execute actions simultaneously.

If concurrent steps are to be performed by one person, place those actions in one step that describes precisely the relationship between the steps.

If concurrent steps are to be performed by more than one person, place a note before the first concurrent step, as appropriate, identifying the following:

- Concurrent steps

- Personnel needed to perform each concurrent step

- Locations where the steps are performed

- Means of communication between locations

3.8 Continuous Action Steps

Continuous action steps are conditional steps where the conditions they describe must be monitored throughout a procedure or a portion of a procedure. For example, a user may need to monitor a gauge and take a specific action if the gauge, at any point during the procedure, indicates a reading above or below a specific level.

Place continuous action steps in the procedure at the point at which they first apply. Repeat the steps periodically, as appropriate, in the body of the procedure.

Format continuous steps as conditional steps and state the portion of the procedure during which they are applicable.

3.9 Repeated Action Steps

Repeated action steps are simple steps that must be performed more than once during the execution of a procedure.

If a step must be repeated an indefinite number of times to achieve an objective, specify that the step is to be repeated until the expected results are achieved.

If it is important to know the number of times the sequence is repeated, provide space for recording the information.

If an action must be performed repeatedly at timed intervals, place

instructions in the procedure and provide suitable space to record the times that the step is performed.

If a step is to be performed periodically throughout a procedure or a portion of a procedure (but not at specific timed intervals), place reminders as steps in the body of the procedure.

If a large group of repetitive actions is required and becomes cumbersome, address the actions in steps that reference an attachment (an example of a large group of repetitive actions is a series of valve alignments).

Notify the performer when repeated action steps are to be discontinued.

3.10 Action Steps Containing Verifications

Verification of steps provide assurance that a required condition exists. If the condition does not exist, the user takes appropriate action to obtain the required condition before proceeding.

Specify the type of verification, who is to verify, how to verify, and when to verify the step.

3.11 Action Steps to Branch or Reference Elsewhere

Referencing and branching increase the potential for error, with attendant safety and administrative consequences. Therefore, branching and referencing are highly discouraged. Use referencing and branching only when it is necessary to direct the user to information that is vital to the performance of the activity and when it is not appropriate to incorporate that information into the base procedure.

Branching routes the procedure user to other subsections within the procedure or to other procedures when the user does not return to the original position.

Referencing routes the procedure user to other subsections within the procedure or to other procedures and then back to the original position in the base procedure.

Evaluate the following criteria to determine if referencing or branching is appropriate:

Can steps be readily incorporated rather than referenced?

Will branching and referencing reduce user comprehension and ease of use?

Will users be directed to small isolated subsections, rather than whole procedures or attachments?

Will branching and referencing cause users to bypass prerequisites that affect the section to which they are being directed?

Will branching and referencing cause users to bypass precautions and limitations that affect the section to which they are being directed?

If the answer to all of the above questions is NO, referencing or branching may be appropriate. If referencing or branching is appropriate, use the following methods:

Indicate a branch step by using the words "GO TO" as applicable.

Specify the location where the user is to go. If the user is being sent to another procedure, identify the procedure number, title, and section of the procedure. If the user is being sent to another location in the base procedure, identify the specific subsection in the procedure.

Indicate referencing, by using the terms GO TO and RETURN TO in the same step to indicate the reentry point into the base procedure.

Ensure that a reference or branch directs the user to all material needed as a prerequisite to the identified material. For example, ensure that the user does not bypass an applicable caution or prerequisite step.

Emphasize GO TO and RETURN TO in branching or referencing steps.

3.12 Action Steps with Acceptance Criteria

Acceptance criteria provides a basis for determining the success or failure of an activity. Acceptance criteria may be qualitative (specify a given event that does or does not occur) or quantitative (specify a value or value range).

Determine where specific acceptance criteria are to be presented in the procedure; either or both of the following methods can be used.

State the location of acceptance criteria, whether located at individual action steps (used when criteria are satisfied at the time of performance), or located in data sheets or other procedures. When acceptance criteria are located in other procedures, link procedures together using referencing techniques if the information cannot be included in the procedure.

Provide a summary of the acceptance criteria in a table, or a list as an attachment.

Include instructions for notifications to be made or actions to be taken immediately by the user in the event that specified acceptance criteria are not met using standard notification step stated earlier. Place these instructions or actions in the body of the procedure. Ensure that these actions are consistent with administrative instructions.

Use acceptance criteria that consist of nominal values, and allowable ranges.

4.0 SECTIONS

3.1 Introduction

7/24/96

Write the introduction to address the purpose and scope of the procedure. The purpose provides a clear description of the goals to be achieved by performing the procedure. The scope describes the limitations of the procedure or what the procedure does not cover. Include in the scope of the procedure, the identification of records generated by the procedure.

Surveillance and special test procedures specify the conditions that require an applicability statement. For example, in a surveillance test procedure, the applicability statement might be that the test is required to provide assurance of operability following specified maintenance.

4.2 Reference Documents

There are three types of reference documents:

Baseline Documents

Compliance Documents.

Referenced Documents.

Baseline Documents is a list of specific documents used to develop and maintain the procedure.

Compliance Documents is a list of specific documents that contain regulatory requirements implemented by the procedure.

Referenced Documents is a list of site specific documents and forms required to perform the procedure.

Group Documents by originating organization (i.e., CFR, DOE Orders) to allow easy location of materials.

4.3 Equipment List

This section lists all equipment to be used during the performance of a procedure that are not ordinary craft tools. The following is a guidance to be used when listing tools:

Identify specific equipment necessary to perform a procedure.

Specify alternative tools and equipment.

If the procedure has a generic application, do not include instrument-specific information (e.g., serial number or calibration date). This information is included in application-specific procedures.

Provide clear specifications for defining test equipment parameters applicable to the procedure. Specifications include ranges, accuracies, and compliance with calibration standards.

Ensure that range and accuracy of measuring equipment are consistent with the expected values to be measured.

The Equipment List section may be divided into subsections listing the following:

Measuring and Test Equipment Calibrated tools and equipment required to perform or verify performance of the procedure.

Special Test Equipment Items not commonly used that are required for the procedure.

4.4 Precautions and Limitations

The precautions and limitations section delineates information that affects the entire procedure, or that occur at multiple points in the procedure. Failure to include precautions and limitations within the procedure can cause severe injury to, or the death of personnel, serious damage to equipment and/or invalidation of the parameters required of the procedure.

Precautions alert procedure users to actions and conditions that represent potential hazards to personnel, possible damage to equipment, or establish abnormal conditions. [Identify and address potential hazards such as the following using 12-1, Safety Manual :](#)

[Radiation or contamination](#)

[High temperature or high pressure fluids](#)

[Hazardous substances](#)

[Electrical shocks](#)

Excessive noise levels

Confined space hazards

Falls

Moving equipment or parts of equipment

Fire hazards.

1

Limitations define boundaries that are not to be exceeded. Identify special qualification and training requirements as a limitation of performance of the procedure. Limitations may also state system or equipment capacities or conditions.

Do not present user actions in the Precautions and Limitations Section.

Avoid generic precautions that are part of a job description or inherent in the task.

4.5 Prerequisite Actions

The prerequisite actions section identifies actions that must be completed by the user and/or requirements that must be met before the user continues with the procedure.

4.6 Performance

The performance section contains the action steps that prescribe the principal tasks and sub-tasks.

Organize activities in the order of performance. Divide the Performance Section into subsections that logically group related activities. Use titles for each subsection that reflect the activity rather than a generic title (for example, "Removing the Actuator," rather than "Actuator").

4.7 Attachments

Provide attachments when the material and function of the procedure require them. Attachments are part of the procedure. Examples of items that may be placed in an attachment are data sheets, tables, figures, graphs, and checklists.

Reference attachments within the text of the procedure.

Include information in attachments that is more conveniently located outside the main body of a procedure.

5.0 EMERGENCY AND ALARM RESPONSE PROCEDURES

11/7/95

The following sections are used as appropriate in Emergency and Alarm Response Procedures.

5.1 Entry Conditions

The purpose of this section is to ensure that the user is in the correct emergency response procedure for the facility or system conditions.

In this section include only those indicators, operating conditions, automatic system actions, or other unique parameters that the operator must assess in deciding to use a particular procedure.

Provide specific definitions of the symptoms to be evaluated by the operator and include probable magnitudes of parameter changes.

Specify the particular procedure section that pertains to each entry condition.

11/7/95

5.2 Alarm/Initiating Device

This section lists:

The nomenclature from the alarm or group of alarms

The initiating devices and set points

Is the title/identifier of the alarm response

For single point alarms use the following method to present the information:

ENGINE CRANK ALARM

<u>ALARM</u>	<u>SET POINT</u>
<u>Engine Crank Light (Amber)</u>	<u>Startup to 600 (550 to 650) rpm</u>

For alarm windows use the following method to present the information:

LOW PRESSURE ALARM

<u>Alarm Window</u>					<u>Initiating Device</u>
<u>A-1</u>	<u>A-2</u>	<u>A-3</u>	<u>A-4</u>	<u>A-5</u>	<u>411-PDSH-052-12</u>

<u>B-1</u>	<u>B-2</u>	<u>B-3</u>	<u>B-4</u>	<u>B-5</u>
------------	------------	------------	------------	------------

Setpoint
0.5" wg

5.3 Automatic Actions

This section lists the expected actions of the system or equipment. List the important (i.e., those that have a direct impact on the condition) automatic functions result from the condition.

5.4 Immediate Actions

This section presents specific, immediate actions in response to the specific emergency/alarm condition. Immediate actions are those actions required to be taken to mitigate the event, stabilize the facility, and reduce the consequences of the event to the health and safety of the public, site personnel, and equipment.

Provide a level of detail that is sufficient to clearly describe the announcements, process, function, and/or the process interfaces.

Designate interfacing points-of-contact between departments and organizations.

5.5 Subsequent Actions

This section presents specific instructions for operation of systems or components subsequent to the immediate action response. This section presents step-by-step instructions for individual actions.

Present additional supportive information such as:

- Limitations and precautions
- Special personnel qualifications
- Special techniques
- Acceptable performance standards

Designate interfacing points-of-contact between departments and organizations.

5.6 Possible Causes

This section provides possible causes for the specified alarm condition.

5.7 Corrective Actions

This section directs the initiation of other procedures or repair activities.

5.8 Exit Conditions

Exit conditions are provided to:

Indicate when performance of the Emergency Operating Procedure may be terminated

State clear criteria that specify under what conditions the procedure may be terminated

State clear guidance on what to do after the procedure is terminated, (e.g., to return to a Normal Operating Procedure, etc.).

WP 05-WH1201	Rev. 0, Draft A	Page 2 of 8
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TABLE OF CONTENTS

INTRODUCTION 3

REFERENCES..... 3

EQUIPMENT LIST 3

5/11/95 [PREREQUISITE ACTIONS](#)..... 3

PERFORMANCE 3

1.0 OCV UPPER ASSEMBLY REMOVAL 3

2.0 ICV LID REMOVAL 4

Attachment - 1 Sign-off Sheet 8

INTRODUCTION

This procedure provides the required instructions for opening radiologically clean TRUPACT-IIs at the Waste Isolation Pilot Plant (WIPP).

REFERENCES

BASELINE

Safety Analysis Report For the TRUPACT-II Shipping Package, NRC Docket Number 71-9218

REFERENCED

None

EQUIPMENT LIST

Crane Load Cell

PREREQUISITE ACTIONS

- 1. Ensure the Waste Handling Building Exhaust Filtration System is operating.
- 2. Ensure that the TRUPACT-II is radiologically clean by reviewing receipt report.

PERFORMANCE

1.0 OCV UPPER ASSEMBLY REMOVAL

1.1 Prepare the TRUPACT-II Outer Containment Vessel (OCV) Lid for removal by removing the following:

- Lift Pocket Covers
- Locking Ring bolts (6)
- Outer Containment Assembly (OCA) Test Port Access Plug
- OCV Vent Port Access Plug
- OCV Vent Port cover

1.2 Install the following in the OCV:

[] Vent Port Tool

[] T-Handles

[] 1.3 Retrieve the Vent Port Plug into the Vent Port Tool.

1.4 **IF** the Locking Ring will **NOT** rotate,
THEN perform the following:

[] 1.4.1 Verify the Vacuum Valve is in OFF position.

[] 1.4.2 Connect the Vacuum Line to the Vent Port Tool.

[] 1.4.3 Start the Vent Hood Fan.

[] 1.4.4 Start the Vacuum Pump.

[] 1.4.5 Place the Vacuum Valve in VACUUM position.

[] 1.4.6 Rotate the OCV Locking Ring to the UNLOCKED position.

[] 1.4.7 Place the Vacuum Valve in OFF position.

[] 1.4.8 Stop the Vacuum Pump.

[] 1.4.9 Stop the Vent Hood Fan.

[] 1.4.10 Disconnect the Vacuum Line from the Vent Port Tool.

[] 1.5 **IF** the Locking Ring will rotate,
THEN rotate the Locking Ring to the "UNLOCK" position.

[] 1.6 Remove the T-Handles from the OCV Locking Ring.

[] 1.7 Break vacuum on the OCV.

SIGN-OFF

[] 1.8 Connect the Adjustable Center of Gravity Lift Fixture (ACGLF) to the OCV Lid.

WARNING

Personnel may be injured if the TRUPACT-II OCV Lid begins to swing due to excessive misalignment.

CAUTION

Exceeding a crane load cell indication of 8000 pounds may damage the TRUPACT-II OCV Lid lift points.

NOTE

Force may be applied to either side of the OCV lid by rotating the ACGLF counterweights to help prevent binding.

WITNESS POINTS

- 1.9 Remove the OCV Lid.
- 1.10 Place the OCV Lid on its storage stand.

SIGN-OFF QA

- 1.11 Release the ACGLF.
- 1.12 Remove the Vent Port Tool.

2.0 ICV Lid Removal

2.1 Prepare the TRUPACT-II Inner Containment Vessel (ICV) Lid for removal by removing the following:

- Locking Ring bolts (3)
- ICV Vent Port Cover
- ICV Outer Vent Port Plug

2.2 Install the following in the ICV:

[] Vent Port Tool

[] T-Handles

[] 2.3 Verify the Vacuum Valve is in OFF position.

[] 2.4 Retrieve the Vent Port Inner Plug into the Vent Port Tool.

[] 2.5 Connect the Vacuum Line to the Vent Port Tool.

[] 2.6 Start the Vent Hood Fan.

[] 2.7 Start the Vacuum Pump.

[] 2.8 Place the Vacuum Valve in VACUUM position.

[] 2.9 Rotate the ICV Locking Ring to the UNLOCKED position.

[] 2.10 Place the Vacuum Valve in OFF position.

[] 2.11 Stop the Vacuum Pump.

[] 2.12 Stop the Vent Hood Fan.

[] 2.13 Disconnect the Vacuum Line from the Vent Port Tool.

2.14 Perform the following:

[] Break ICV vacuum.

[] Remove Vent Port Tool

[] T-Handles

[] 2.15 Connect the ACGLF to the ICV Lid.

CAUTION

Exceeding a crane load cell indication of 5000 pounds may damage the TRUPACT-II ICV Lid lift points.

NOTE

Force may be applied to either side of the ICV lid by rotating the ACGLF counterweights to help prevent binding.

- [] 2.16 Remove the ICV Lid.
- [] 2.17 Place the ICV Lid on the storage stand.
- [] 2.18 Release the ACGLF.

WP 05-WH1201	Rev. 0, Draft A	Page 8 of 8
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Attachment 1 - Sign-off Sheet

Step No.	Action	Initial
1.7	Break vacuum on the OCV.	
1.9	WITNESS POINT Remove the OCV Lid.	QA
1.10	WITNESS POINT Place the OCV Lid on its storage stand.	QA

_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
Printed Name	Signature	Date	Initials

WP 04-HV4022	Rev. 0, Draft A	Page 2 of 4
--------------	-----------------	-------------

11/7/95

TABLE OF CONTENTS

ENGINE CRANK ALARM 3

POPL/PRE-OIL PRESSURE ALARM 4

WP 04-HV4022	Rev. 0, Draft A	Page 3 of 4
--------------	-----------------	-------------

11/7/95

ENGINE CRANK ALARM

<u>ALARM</u>	<u>SET POINT</u>
<u>Engine Crank Light (Amber)</u>	<u>Startup to 600 (550 to 650) rpm</u>

IMMEDIATE ACTIONS

- 1.0 Push the EMERGENCY STOP button.
- 2.0 Place the ENGINE MODE switch to the OFF/RESET position.
- 3.0 IF startup attempt was initiated by Central Monitoring Room Operator (CMRO) THEN request CMRO to initiate a remote shutdown signal.
- 4.0 Verify the other diesel generator is operable.

POSSIBLE CAUSES

The diesel engine started and starter motor still engaged

END

WP 04-HV4022	Rev. 0, Draft A	Page 3 of 4
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11/7/95

POPL/PRE-OIL PRESSURE ALARM

<u>ALARM</u>	<u>SET POINT</u>
POPL/PRE-OIL PRESSURE LIGHT (AMBER)	30 pounds per square inch

AUTOMATIC ACTIONS

Generator will shutdown.

IMMEDIATE ACTIONS

- 1.0 Observe and note the lube oil pressure on the mechanical oil pressure gauge.
- 2.0 Monitor the jacket water temperature and advise the CMR of temperature.
- 3.0 Notify the Facility Operations Shift Supervisor of the condition.
- 4.0 Notify the Central Monitoring Room Operator to log the alarm.
- 5.0 Verify the other diesel generator is operable.

POSSIBLE CAUSES

- Engine lube oil low
- Engine lube oil pump defective
- Lube oil instrumentation defective
- Lube oil temperature high

END

Attachment 3 - Verb Usage

5/11/95

This list is not all inclusive. It contains the verbs generally used at the WIPP site.

<u>Actuate</u>	<u>To put into action or use. When possible, use "START".</u>
<u>Adjust</u>	<u>Alter (parts of a device) for proper functioning</u>
<u>Align</u>	<u>Arrange components into a desired condition.</u>
<u>Assess</u>	<u>Make a judgment as to the status or extent of change.</u>
<u>Attempt</u>	<u>To make an effort to do.</u>
<u>Bleed</u>	<u>Cause to escape from a system or container in a regulated manner.</u>
<u>Block</u>	<u>To prohibit an automatic action or motion, to isolate a system</u>
<u>Bypass</u>	<u>Circumvent some operational mode of a system or component.</u>
<u>Calculate</u>	<u>Perform a mathematical process to produce a value.</u>
<u>Calibrate</u>	<u>The set of operations which establish, under specified conditions, the relationship between values indicated by a measuring instrument or measuring system, and the corresponding standard or known values derived from the standard.</u>
<u>Call-up</u>	<u>Summon information.</u>
<u>Certify</u>	<u>To attest as being true or to represent as meeting a standard.</u>
<u>Charge</u>	<u>Add fluid, gas, or energy.</u>
<u>Check</u>	<u>Inspect for satisfactory condition, if condition is not satisfactory, report the condition to the immediate responsible management.</u>
<u>Close</u>	<u>Mechanically: to change the position of a mechanical device so that physical access of fluid or gas flow is prevented.</u> <u>Electrically: to position a circuit breaker or relay so that electrical current flow is permitted.</u>
<u>Collect</u>	<u>Cause the assembly of something in a fixed location or container.</u>
<u>Comply</u>	<u>Follow a requirement.</u>
<u>Confirm</u>	<u>Assure that an action or task has been performed/completed.</u>

Attachment 3 - Verb Usage

5/11/95

Connect Fasten or join together.

Cool Lower the temperature of equipment or an environment.

Creep A very slow, usually continuous time-dependent movement.

Cycle Cause repetition of an action or activity, change of a valve from one position to another, then back

Decrease Do NOT use. Use lower.

De-energize To disconnect equipment from its electrical power supply.

Depressurize Do NOT use. Use lower the pressure.

Dilute Reduce in concentration.

Dispatch Send by a predefined method.

Don To put on.

Drain Remove liquid from an enclosure or part of an enclosure to a predetermined level.

Drive Move equipment to a prescribed position.

Emplace To put into position.

Energize To apply energy (electrical, pneumatic).

Ensure Do NOT use, use Check.

Equalize Make a value or parameter the same as that of another.

Evaluate Assess a condition based on observation, experience, or external input.

Execute Perform an instruction or step.

Feed Add fluid or gas to a system or equipment.

Fill Add fluid, gas, or a material to a system, equipment, or container to a prescribed point.

Ground Provide an electrical path to a system at zero potential.

Attachment 3 - Verb Usage

5/11/95

<u>Hold</u>	<u>A continued action that maintains a device or a spring returned switch in a required position.</u>
<u>Increase</u>	<u>Do NOT use. Use raise.</u>
<u>Initiate</u>	<u>Begin or start an activity.</u>
<u>Inspect</u>	<u>Evaluate for comparison with a pre-defined limit or standard.</u>
<u>Isolate</u>	<u>Mechanically: to change the position of a valve so that physical access of fluid or gas flow is prevented.</u>
	<u>Electrically: to remove or open an electrical circuit breaker so that passage of electrical current is not permitted.</u>
<u>Jog</u>	<u>A momentary start/stop action of a motor (to check rotation).</u>
<u>Land</u>	<u>The re-connection of electrical leads temporarily disconnected for maintenance, tests, or calibration purposes.</u>
<u>Latch</u>	<u>To make fast.</u>
<u>Lift</u>	<u>To temporarily disconnect electrical leads for maintenance, tests, or calibration purposes.</u>
<u>Limit</u>	<u>Restrict or impose bounds.</u>
<u>Load</u>	<u>The amount of torque being supplied or the electrical current that a component is using.</u>
<u>Lock</u>	<u>Securely fasten</u>
<u>Lower</u>	<u>To decrease (e.g. elevation, pressure, temperature, voltage)</u>
<u>Maintain</u>	<u>Continue an action or condition without interruption.</u>
<u>Notify</u>	<u>Inform a specified person.</u>
<u>Open</u>	<u>Mechanically: to change the position of a mechanical device (valve) so that physical access of fluid or gas flow is permitted.</u>
	<u>Electrically: to position an electrical circuit breaker so that electrical current flow is prevented.</u>
<u>Operate</u>	<u>To cause to function.</u>

Attachment 3 - Verb Usage

5/11/95

<u>Overpack</u>	<u>To repackage a Waste Container into a larger package.</u>
<u>Override</u>	<u>To bypass a normal function and allow operation in a condition other than normal.</u>
<u>Pack</u>	<u>Fill with packing material; usually applies to lubricate and seal.</u>
<u>Perform</u>	<u>Carry out an action or series of procedure steps as written.</u>
<u>Position</u>	<u>To "place" a component in a specified condition.</u>
<u>Pressurize</u>	<u>Do NOT use. Use raise.</u>
<u>Press</u>	<u>Inward motion of a push button.</u>
<u>Rack-in</u>	<u>Physically connecting an electrical circuit breaker to its associated power source.</u>
<u>Rack-out</u>	<u>Physically disconnecting an electrical circuit breaker from its associated power source.</u>
<u>Rack-to-test</u>	<u>Physical placement of an electrical circuit breaker so that control functions are operable while the supply and load sides are disconnected.</u>
<u>Raise</u>	<u>To increase (e.g. elevation, pressure, temperature, voltage).</u>
<u>Recirculate</u>	<u>Cause repetitive motion of a fluid or gas in a system.</u>
<u>Reduce</u>	<u>Do NOT use. Use lower.</u>
<u>Regenerate</u>	<u>Restore towards original properties or capabilities.</u>
<u>Reset</u>	<u>Placement of an automatic system or component to its normal condition or pre-action state.</u>
<u>Retract</u>	<u>Withdraw or take back.</u>
<u>Sample</u>	<u>A representative portion taken for examination.</u>
<u>Secure</u>	<u>Take appropriate actions to remove from service or to prevent a return to service.</u>
<u>Set</u>	<u>Adjust as necessary to obtain a specified value (set Diesel Generator loading to 300 Kv).</u>

Attachment 3 - Verb Usage

5/11/95

Shut Do NOT use. Use close.

Shut down Terminate operation or remove from service.

Start Initiate equipment operation or begin a process.

Stop Discontinue.

Terminate Form an end connection.

Throttle Physical adjustment of a valve to obtain a specified position or flow rate.

Torque The measurement of a turning or twisting force that produces tension

Transfer Movement of a fluid, gas, or electrical current from one source to another

Trip An automatic or manual operation which removes an electrical breaker or device from service

Vent Removal of a liquid or gas to allow system filling, draining, or equalization.

Verify Check that the required condition exists. If the condition does not exist, take appropriate action to obtain the required condition before proceeding.