USQ# 14-1865-S

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1.0 PURPOSE AND SCOPE

This standard communicates the processes, requirements, and expectations for work planning and work instruction development at Washington River Protections Solutions, LLC (WRPS).

This standard implements specific requirements from DOE O 422.1, "Conduct of Operations" as defined in TFC-PLN-05.

This document does not supersede the requirements in implementing procedures.

2.0 IMPLEMENTATION

This standard is effective on the date shown in the header.

3.0 WORK PLANNING STANDARD

An integral part of work planning is the use of a "graded approach," whereby the amount of rigor applied to the planning process is determined by the potential impact that would result from incorrect or inconsistent performance of work activities. There are many variables associated with work planning, development of work instructions, and conduct of maintenance/work activities. These variables influence the level of detail required to safely and properly perform the work. Some of these variables include:

- Task complexity and frequency with which it is performed
- When the work must be performed
- Location and type of equipment
- Type of work activity
- Human factors and performance considerations
- Safety significance of the task
- Environment in which the work is performed
- Reliance placed on skill of the craft.

Each variable needs to be taken into consideration during the work planning process and when developing the work package/work instructions. Where there is minimal risk and minimal complexity, more reliance may be placed on skill of the craft. The greater the risk and complexity, more reliance is placed on the detail provided through work instructions.

The following sections delineate all of the aspects of how to plan a work package. For specific sequencing of how and when they are used, see TFC-OPS-MAINT-C-01.

3.1 Work Planning Levels

WRPS uses four levels of work planning. Refer to TFC-OPS-MAINT-C-01, Attachment A for factor/criteria used to determine the level of work planning.

- Level 1 – Generation of detailed work instructions required
- Level 2 – Pre-approved procedures or pre-approved work instructions
- Level 3 – No detailed work instructions required
- Level 4 – Verbal directions, no work control document is generated for the work activity.

3.2 Collection of Information

The first step of the planning process is for the planner to gain an understanding of the work scope. The planner and the planning team must obtain sufficient detail to determine the work steps necessary to safely and successfully complete the work activity. This is often accomplished by performing a walkdown of the work location where the systems, structures, and components are located. While systems, structures, and components may be similar, the location at which the work will be performed may introduce hazards that are not be present in other locations.

Work instructions should include manageable work scopes. Work instructions that contain large scopes of work which expands over several tasks and long durations should be evaluated and may be divided into separate work instructions and packages.

In doing so the planner must:

1. Understand the problem/issue to be resolved.
2. Determine the desired end state of the activity.
3. Gather baseline data.
4. Determine if the activity will fall within the Task Specific, System Specific, or Defense-in-Depth information identified in this standard.

The planner develops a draft set of instructions that contain the main tasks and basic outline of steps necessary to complete the scope of work.

Level 1 work packages employ a dedicated planning team consisting of workers, field work supervisor (FWS), and subject matter experts (SMEs). The planning team members are involved in work instruction development by participating in:

Performance of a field walkdown

- Provides for familiarity of work site
- Obtain location specific information that must be considered during planning
  - Building, room number, column, elevation, specific location in farm, etc.
  - Potential hazardous energy sources requiring application of lock out/tag out (LOTO)
  - Identify possible interferences (e.g., insulation, fire protection equipment, mechanical components, limited space)
  - Identification of elevated work requiring ladder, elevated work platforms, scaffolding, etc.
  - Identify lifting requirements (e.g., rigging, crane, special/critical lifts)
  - Determine if welding or cutting will be required

– Identify activities that require permits or plans (e.g., excavation, confined space, vehicle travel, asbestos, etc.).

- Identify equipment nomenclature and identification

  It may be necessary to initiate a request to re-tag the equipment if there is an absence of a tag or degradation is noted.

Engineering Scoping Meeting

When the activity is designated as a project with an assigned project engineer, an Engineering scoping meeting will occur. This meeting shall include the planner, Design Authority (DA), and Area Engineer to discuss the scope details and overview of the project. The Engineer Work Order Review and Approval (WORA) criteria and the project specification/MT (as applicable) will be reviewed during this meeting. This discussion is intended to ensure the Area Engineer is made aware of scope details relating to location specific hazards in advance of the planning process so they can determine when their involvement will be needed. The Area Engineer may waive attending the team planning meeting based on this discussion and defer attending the meeting to the project engineer.

3.3 Team Planning Meetings

3.3.1 Performance of Team Planning Meetings

- Gain an understanding of the equipment (e.g., valve, pump, filter).
- Understand the installation and system configuration (e.g., flanged, welded, bolted).
- Discuss and review the logical sequencing of activities to complete the task.
- Discuss special tool/special equipment requirements.
- Determine “workability” requirements for the work instructions.
- Discuss possible contingency needs in planning and tools/equipment.
- Discuss how hazard controls will be incorporated into the work instructions.
- Perform JRG Determination using JRG Screening Criteria (A-6006-262) and/or TFC-OPS-MAINT-C-01, Attachment E.

3.4 Hazard Consideration

3.4.1 Hierarchy of Hazard Controls

Development of the work package requires implementing appropriate controls to mitigate hazards associated with the work activity. TFC-ESHQ-S_SAF-C-02 provides the process for identifying, evaluating, controlling, and communicating potential hazards associated with the work. An integral part of developing hazard controls is the hierarchy of hazard controls.

The following hierarchy of controls is followed to eliminate or mitigate hazards, in descending order, when feasible and appropriate:

- Eliminate or reduce the hazard (e.g., different chemical cleaning agent)
- Utilize engineering controls (e.g., ventilation)
- Administrative controls (e.g., dose monitoring)
- Personal protective equipment (PPE) (e.g., self-contained breathing apparatus).

Information that has been collected as part of the work planning can be used to evaluate hazards using the hierarchy of controls to identify methods to eliminate, reduce, or control the hazards. Six points to consider for each identified hazard control include:

- Can the hazard be eliminated?
- Can a less hazardous way to do the job be found?
- Can the physical conditions that create the hazard be changed?
- Can the sequence or way the job is planned be revised to a safer alternative?
- Can the need for doing the job or the frequency of doing the job be reduced?
- Can personal protective equipment be used?

Controls for the hazards are identified and incorporated into the work control documents (work instructions/procedures) and/or permits. The controls should be clearly defined, implemented, and remain in effect as long as the hazard poses a health or safety risk. Refer to Precautions/Limitations and Prerequisite sections for guidance on how to implement the controls.

3.4.2 Job Hazard Analysis (JHA)

- Work with FWS and safety professional, to determine applicability of the General Hazard Analysis (GHA) and/or Standing JHA (SJHA).
- If GHA or SJHA do not provide adequate hazard controls, develop JHA checklist in accordance with TFC-ESHQ-S_SAF-C-02. The JHA Checklist is used in collection of field data relating to potential hazards or other limitations
- JHA Walkdown is performed in accordance with TFC-ESHQ-S_SAF-C-02.
- Upon completion of JHA Checklist, the controls are incorporated into the work instructions as appropriate
  - The hazard controls incorporated into the work instructions should identify when the controls are to be implemented (e.g., Precautions/Limitations for controls applicable to the entire scope of work, WARNINGs, specific work steps, or sequences of steps, etc. for specific hazard controls).

- A JHA Walkdown is required on all Level 1 work packages, unless a Level 2 Manager approves and documents justification for a table top hazard analysis as outlined in TFC-ESHQ-S_SAF-C-02.

- When the performance of a JHA walkdown is not feasible due to "As Low As Reasonably Achievable" (ALARA) concerns, data should be obtained through alternate means (e.g., design documents, photographs).

3.4.3 Evaluate Joint Review Group (JRG)

- Perform an evaluation using the following High Risk/High Impact criteria to determine whether the work activity requires further evaluation by a Joint Review Group (JRG) Chairman.

- If the work activity does not meet criteria in TFC-OPS-MAINT-C-01 Attachment E "JOINT REVIEW GROUP DETETERMINATION," no further action is required.

- If any of the criteria in TFC-OPS-MAINT-C-01 Attachment E are met,

  – Complete the Joint Review Group (JRG) Screening Criteria checklist (A-6006-262) and submit to the JRG Chairman in accordance with TFC-ESHQ-RP_ADM-C-11, and complete Form A-6006-958, Risk Analysis for Work Activities.

3.4.4 Evaluate Risk Analysis for Work Activities (What If)

During development of work instructions, a series of task analyses are performed. A Risk Analysis for Work Activities is a process for identifying risks; evaluating the assumptions regarding the risk; and implementing methods to avoid, eliminate, and/or manage the risk throughout the performance of work.

The Risk Analysis for Work Activities is a process through a graded approach to identify critical assumptions, validate those assumptions with objective evidence, and implement controls where assumptions cannot be validated. This analysis will be used by planners and the work team at any time during the planning process for all activities, but is required to be formally conducted and documented on site form A-6006-958 when Attachment E of TFC-OPS-MAINT-C-01 criteria is met. It also may be performed at any time if there is uncertainty regarding assumptions pertaining to the tasks associated with the performance of the work activity.

The planning team develops a list of possible risks associated with performing the work activity. Preliminary risks may be obvious as they can be readily identified through lessons learned, risk of similar work experience, and cause/effect. It is essential to evaluate identified risks, determine their impacts on getting work done, and methods to prevent negative consequences

Risks that are not credible but could cause irreversible harm and cause negative consequences can be overlooked because the chances of them occurring are very unlikely.

Assumptions must be validated with objective evidence. If objective evidence cannot be obtained, the assumption is considered invalid and a control or contingency must be placed in the work instructions and/or supporting documents within the work package.

A critical step/task shall be identified in the work instructions as a step, series of steps, or an action, that if performed improperly, will cause immediate irreversible harm to plant equipment, personnel, or the environment. In some cases another process has the same rigor that a critical step would implement, and would not require that step to be formatted as a critical step (e.g. Lockout/Tagout where the step to "Implement LOTO to support xxxx" would not be required to be formatted as a critical step). For a list of identified Critical Step Activities, go to the Work Planning & Control Website.

At this point the planning team should consider appropriate language and tools to ensure workers recognize the importance of performing the step correctly, e.g., WARNINGS, Verification signatures, place keeping, independent verification, etc. Feedback from previous experiences and Lessons Learned relevant to the task should be factored into the work planning effort.

EXAMPLE:

(Critical Step)

5.19 VERIFY fall protection boundary has been installed.

_____	_____	_____
Print Name (First and Last)	Signature	Date

3.4.5 Contingency Planning

When warranted, the planner should include actions to be taken for undesired but probable conditions. Examples would include discovery of equipment degradation or additional tools/equipment needed. If there is potential for these types of probable conditions, the planner should consider the following when determining the need and scope of contingency plans:

- What is the worst thing that could happen?
- What defenses/contingencies are in place to address the worst case?
- What additional tools may be required to address the contingency?

Contingency steps should be integrated with the appropriate action in the work instruction section.

3.5 Work Instruction Development

Work instructions are specific to the task and include preparatory actions (prerequisites), precautions and limitations (that apply to the entire scope of the work activity), detailed work steps for performing the activity, and testing/restoration actions necessary to return to the desired state. Utilizing the collected information (Section 3.2), the work package instructions are developed with sufficient detail and flexibility to allow safe and successful completion of the activity.

The Task-Specific, System-Specific, and Defense-in-Depth direction provided in Section 3.12 is evaluated for applicability, and used to provide additional specific information in the work instructions as applicable.

Work instructions are not written with generic information and do not include actions covered by Emergency Response Procedures (ERPs), Abnormal Operating Procedures (AOPs) (e.g., response to lightning strikes), or Alarm Response Procedures (ARPs).

If the work instructions from a previously used work document are to be used as the basis for developing new instructions, update the instructions based on current hazards, facility conditions, location, the Work Planning Template Standard Content Library, supporting documents, and to align with current procedural expectations.

If previous instructions do not exist, draft work instructions should be prepared ensuring the following:

- Instructions are developed in a step-by-step manner, unless otherwise noted
- Inclusion of special training requirements applicable to the work being performed
- Include prerequisites, limitations, precautions, and process parameters, including those for testing and operational activities
- Incorporate hold points into work instructions utilizing input/direction from SMEs
- Post maintenance testing instructions are required for work affecting safety SSCs. Post maintenance testing for minor maintenance (e.g., repaint a step, repair lagging, etc.) may not be applicable.
- Incorporate testing instructions, acceptance criteria, and documented engineering requirements into the work instructions (e.g., Post Maintenance Testing, Construction Acceptance Testing, Post Modification Testing, etc.) with support from the engineering organization in accordance with TFC-ENG-STD-08.
- More extensive maintenance (e.g., rebuild an air compressor) may require a series of tests specified by the vendor or engineering; therefore, a graded approach is applied to post maintenance tests for non-safety SSCs.

3.6 Placekeeping

Consideration should be given to placekeeping methods for critical tasks, complex tasks, or work that would logically be performed over several shifts/days. Place-keeping prevents omitting or duplicating work steps. Due to the adverse consequences that could occur during critical tasks, place-keeping allows a positive record of steps that have been completed and those not yet performed.

Placekeeping should also be considered for work steps that can be performed in any logical order to prevent missing or re-performance of those work steps.

There are several techniques for placekeeping utilized in the field by FWSs. While planning work instructions, if placekeeping will be utilized, the following format will provide consistency throughout the organization:

5.1.6 **CONFIRM** the following circuit breakers in the 241-A-701 Compressor Building MCC-1 distributor panel are in the ON position:

_____ 5.1.6.1 Breaker 23

_____ 5.1.6.2 Breaker 25

_____ 5.1.6.3 Breaker 28

3.7 Troubleshooting

When developing scope statements/work instructions for troubleshooting activities, it is necessary to ensure inclusion of limitations and boundaries for the troubleshooting effort. For Level 1 work packages, it is important to provide instructions general enough for the troubleshooting to occur without the need for multiple work order changes; yet specific enough to prevent undesired secondary effects in the system or the introduction of unanalyzed hazards. The work instructions should include applicable troubleshooting limitations, system restrictions and plant conditions required to cover the work.

3.8 Template Library

The template library is used for inclusion of SME approved work instruction based on the work activity. See the planning website.

3.9 Work Instruction Template

The work instruction template provides a framework for development of work instructions and promotes consistency in work instruction format. The work instruction template typically includes the sections noted below. The sections with an asterisk (*) are the minimum sections to consider during the planning process:

- *1.0 SCOPE
- *2.0 SPECIAL TOOLS AND EQUIPMENT
- *3.0 PRECAUTIONS AND LIMITATIONS
- *4.0 PREREQUISITES
- *5.0 DETAILED WORK INSTRUCTIONS
- *6.0 TESTING AND RESTORATION
- 7.0 REFERENCES/SOURCE DOCUMENTS.

3.9.1 Scope Statement

The scope statement is formed after information is collected and the desired end state is known. The scope section should include identification of the location, specific component and the end state.

3.9.2 Special Tools and Equipment

Identification of special tools and equipment is essential to ensure successful completion of planned scope.

When Special Tools, Equipment, and/or M&TE are required, a prerequisite action is added to confirm availability prior to work performance.

- Special Tools: Tools (site fabricated or commercially obtained off the shelf) that require approval by engineering and are reviewed under the USQ process. They may require instructions for their use. Common hand tools and equipment are **NOT** identified or listed.

- Equipment: Non-typical tools or equipment that may require procurement before the scope of work can be initiated. Examples include HEPA Vacuums, mobile light plants, etc.

Measuring and Test Equipment (M&TE): Where a piece of M&TE is required, identify the type of M&TE or equivalent to perform the activity of the work. Documentation of the M&TE description, serial number, and calibration date (for Construction, Calibration/Use date is used) should be incorporated into the work instructions.

3.9.3 Precautions and Limitations

Precautions and limitations should be written to inform the worker of hazardous conditions to be avoided and boundaries not to be exceeded. The planner should only include those precautions and limitations that are general to the task or apply to the entire job.

When a hazard pertains to a specific step(s), a WARNING or CAUTION is used preceding the step(s) to which it applies (Refer to Section 3.9.5.2). Inclusion of the step(s) specific information is **NOT** included in the precautions and limitations section.

If actions are required by workers to respond to precautions and limitations, the planner should provide action steps at the appropriate location in the specific work instructions. Action steps are **NOT** included in the precautions and limitations section. Generic precautions that are part of a job description or inherent to the task need not be included in the Precautions and Limitations section.

The planner should consider the following when preparing precautions and limitations for the particular work activity. Some of these might also require Prerequisite actions or steps in the Detailed Work Instructions:

- Safety of facility/farm personnel and the general public

- The protection of equipment and materials

- ALARA considerations

- The reduction of personnel or environmental exposure to any of the following (recognize that many, if not all of the following, are typically addressed through existing facility administration programs and procedures):

  - Radiation or contamination
  - High temperature or high-pressure fluids
  - Dangerous chemicals, poisons, or asbestos
  - Electrical shocks
  - Excessive noise levels

  - Confined space hazards
  - Moving equipment or parts of equipment
  - Ergonomics
  - Fire hazards
  - Fall hazards.

- Limitations identified in approved vendor information

- Limitations identified in applicable design documents

- Impact on Equipment operability/function

- Alarms affecting equipment or facility availability that may occur or are expected to occur as a result of the performance of the task

- Mechanical or electrical bypasses (lifted leads, inhibits, jumpers, and fuse removals) used in the performance of the task.

3.9.4 Prerequisites

Prerequisites provide the actions to be performed and/or verified as complete **before proceeding** with the performance of the specific work instructions. Prerequisites should be arranged in the order they must be verified. A NOTE can be used when step sequence is not required.

Prerequisites should include required field preparations or notifications such as:

- Establishing the appropriate system or equipment alignment

- Confirming operability of systems and components before removal from service

- Verifying the installation of portable communications equipment

- Preparing special test equipment

- Identifying needed support services

- Notifying organizations affected by actions taken during the conduct of work (e.g., Hanford Fire Department, Electrical Utilities, Information Services Provider)

- Verifying completion of other tasks that must be performed before proceeding with the main task

- Verifying any special training AND/OR qualification requirements required by personnel to complete the scope or work activity.

When prerequisites are included, it may be necessary to include space for a performance verification sign off to verify completion of the prerequisite action. Inclusion of a performance verification sign off will be determined based on SME and work planning team input utilizing a graded approach to the activity.

EXAMPLE:

4.1 **VERIFY** system is shut down per TO-099-099

_____	_____	_____
Signature	Print Name (First and Last)	Date

3.9.5 Work Instructions

Work instructions should be developed specific to the scope of work being performed. It should not be assumed that a work activity will be performed by a particular individual or team.

Improper use of boilerplate statements should be avoided. Inclusion of multiple boilerplate statements with no specific value creates a numbing effect and distracts from the steps developed to perform the work. Content must be specific to actions to be taken and controls necessary to ensure worker safety and protection of the equipment and environment.

An appropriate level of detail is required in developing work instructions.

There are several factors used to determine the level of planning. It is often believed that Skill of the Craft (SOC) solely determines the level of planning. This is NOT the case. SOC refers to activities that are considered to be standard industry practices and skills learned through an apprenticeship program or equivalent, and may not require step-by-step instructions.

Level 1 and Level 2 work planning contains instructions with varying levels of detail. Some steps are written in a step-by-step manner because the work is complex, contains high hazards/consequences, and/or involves implementing complex hazard controls. Other steps (within the same work instructions) may provide less detailed guidance because the activity is on the SOC list and detailed steps are not needed to direct performance of the task.

Level 3 work planning requires no detailed instructions. Scope statements are sufficient in communicating the task to be performed. The activity ***must*** be on the SOC list and meet the criteria as outlined in TFC-OPS-MAINT-C-01, Attachment A.

To ensure that work instructions contain an appropriate level of detail, obtain feedback from the end user (e.g., workers). Discussions with the workers during the planning process (e.g., team planning meetings, field walkdowns, etc.) are an opportunity to identify the appropriate level of detail required.

Error tolerance and the possible effects to facility operations are also used as considerations when assessing the need for work instructions and the level of detail needed. The What If Criteria Risk Analysis for Work Activities (What If) is essential to gain understanding where vulnerabilities exist and where an increase in level of detail may be needed to ensure effective control of work.

Specific activities or specific systems require additional Defense-in-Depth information to be utilized in the development of detailed work instructions. The Task Specific, System Specific, and Defense-in-Depth (DID) Information section provides direction for addressing some specific activities or working on certain types of systems.

3.9.5.1 Inclusion of Pre-Job Briefing Action Statement

There are three levels of detail and formality associated with pre-job briefings. They are routine, general, and documented. It is the responsibility of the supervisor to evaluate the work activity, document, and/or procedure, to determine which type of pre-job briefing will be performed.

Documented pre-job briefings are required for all high risk activities, Level 1 work packages, and work packages involving lockout/tagout for control of hazardous energy (including eight-point criteria lockouts) (Reference TFC-OPS-MAINT-C-02).

If emphasis is needed on key elements of the work package, such as those noted below, inclusion of an action statement to perform a Pre-Job Briefing may be necessary as a Prerequisite to ensure emphasis is placed on areas deemed important.

3.9.5.2 Incorporation of Controls

- Controls within the qualification or training of the worker that are often used do not need to be discussed in the work instructions. Examples:

  – Use of leather gloves
  – Use of arc flash PPE.

- Controls within the qualification or training of the workers and that are applicable to the entire work activity, should be placed in the Precautions/Limitations section as a reminder that the hazard exists and the workers are expected to take the appropriate actions. Examples:

  – Use of a Radiological Work Permit to establish controls in a radiological work area

  – Observation of overhead lines when they are present at the job site and the work activity has a potential to come in contact with the lines

  – Hazards relating to the task within the work package have been analyzed by the team and the work has been determined to fall within the General Hazard Analysis.

- Controls within the qualification and training of the workers, but which are for hazards that are introduced at specific steps or by specific actions during the job, are flagged by use of a WARNING or CAUTION. If WARNING or CAUTION statements are included, they are to be placed prior to the step to which they apply and printed on the same page as the action to which they apply.

  A WARNING statement identifies a hazard to personnel or to the environment and does not contain action statements.

EXAMPLE:

WARNING

Contact with the sampled liquid could cause skin contamination and uncontrolled exposure to contaminated materials.

A CAUTION statement identifies a hazard to equipment, facilities, process, or product and does not contain action statements.

EXAMPLE:

CAUTION

Failure to close Valve V-100 could result in over pressurization and subsequent failure of Filter F-100.

Warnings and Cautions may be numbered if more than one WARNING or CAUTION is at the same location.

- If an action may cause equipment shutdown or process upset (e.g. Transfers), the use of a CAUTION shall be utilized to identify Limiting Condition of Operations (LCO).
  - It will be necessary to clearly reference specific actions (e.g., Notify Central Shift Manager prior to proceeding). These action statements would follow immediately after the CAUTION. Some equipment shut down will require entry into an LCO, and Central Shift Manager authorization is required prior to proceeding.
  - When a time limit exists, it is important the time the system is rendered inoperable for maintenance and then restored to an operable condition is noted. The instruction should include both the step number at which the system will be made inoperable and the step number in which the system is restored to an operable status in the Precaution and Limitations section where the operational requirement is discussed. In addition, space should be made available to make time entries for when the system was rendered inoperable and when the system was returned to service.
- Controls for hazards and complex activities require detailed work instructions for how the workers are to mitigate the hazard or perform the activity. These are provided in the detailed work instructions or procedure in a way that prevents or mitigates the hazard and/or provides clear direction on how to complete the activity.
  - The steps required to successfully release the pressure on a system which is not normally performed

– The use of permits or forms (e.g., Lockout/Tagout, Excavation, Confined space, etc.) that have the controls in them.

3.9.5.3 Single Action Work Steps

Work instruction steps must be single action steps that are complete, concise, and clear. This action can typically be expressed by one action verb, such as REPAIR, PERFORM, INSTALL, etc.

- Vague phrases: The use of vague phrases should be avoided in the detailed work instructions (e.g., when appropriate, as required, when applicable, etc.). These phrases require the field team to interpret the work planner's meaning when the work instructions were developed. Such interpretations may result in outcomes that are different than those intended.

- The proper verb to specify the desired action must be selected. The accepted definition of each action verb must be considered to ensure proper verb selection. A list of action verbs and their accepted meaning is available on the Work Planning & Control Website.

- The importance of the definition of a verb is important. For example, when using the verb **ENSURE**, it should be understood that we are assuming some level of risk when allowing for the manipulation of equipment or changing of a field condition without first obtaining specific permission to do so. Therefore when using this verb, the activity should constitute minimal risk to personnel, equipment, environment, or process. If these conditions are **NOT** met, a different specific action verb (e.g., **TURN, OPEN, CLOSE, MAINTAIN, VERIFY, CHECK**, etc.) must be used.

- Vague Actions: The use of vague language is discouraged. Steps such as "per field work supervisor" or "per instrument technician" should not be utilized in work instructions unless the action being directed is specified. It is important that the action has limitations and/or controls associated with the action.

  – Example of CORRECT use: **RELOCATE** ARA/CA boundaries as directed by HPT, based on air samples and contamination surveys.

  – Example of INCORRECT use: **RELOCATE** ARA/CA boundaries as directed by HPT.

- Vague Actions: Do not use "VERIFY instrument is operational" or "TEST component for proper operation" type statements. The language should provide the expectations of the action.

- Vectoring: This is the practice of referring the reader to different documents or procedures for instructions and requirements. Vectoring can cause the reader to lose track of where they are in the work sequence and miss work instruction steps, or introduce conflicting requirements. To the extent possible, vectoring should be avoided and work instructions written to include all work instruction steps necessary for the worker to perform the task.

- Reference to specific steps in sections of a continuous technical procedure or attachment in the detailed work instructions would be considered improper vectoring. If direction is provided to use a procedure for some portion of the work, it shall be ensured that the entire procedure is meant to be used. If entire sections of a technical procedure are intended to be used, reference can be made to the entire section of that procedure, as long as that section was designed for individual use in that procedure.

- All supporting documents that direct work activities are subject to a hazard review per TFC-ESHQ-S_SAF-C-02 and change control as outlined in TFC-OPS-MAINT-C-01.

- If the entire technical procedure, or entire section, is not needed, or not intended to be used by the workers, the applicable steps of the procedure should be incorporated into the work instruction steps. The work planning team and SME input is critical to ensure a logical flow of work and appropriate procedure reference when sub-sections or portions of procedures apply to the work to be performed. Reference to the procedure should not be made if the steps are incorporated in to the work instruction. When procedure sections are incorporated, the work planning team and SMEs must ensure applicable prerequisites, precautions/limitations, etc., are also incorporated. In addition, the planner must ensure the copied content meets this standard.

- Use steps that direct the user to do one thing at a time.

- Write work steps to contain a single action. This action can typically be expressed by one action verb, one object, and supporting information.

  – Select the proper verb to specify the action
  – As much as applicable, begin the sentence with the verb.

- State the object of the verb and the supporting information:

EXAMPLE: INSTALL glove bag on riser 1-B.

3.9.5.4 Sequencing of Work Steps

Primary action steps and sub-steps should be written to match the order in which they must be performed. If work instruction steps can be worked out of sequence, concurrently, or simultaneously, it should be ensured that the out-of-sequence work instruction steps are identified with a NOTE immediately preceding the first step(s) that may be worked out of sequence. When tasks are used in the Scope statement to identify separate tasks of the job, the out-of-sequence direction may be documented in the Scope statement or in the body of the work instructions. Caution must be used in communicating the out of sequence option to ensure clear direction on the allowance. Examples of out of sequence NOTES are provided.

EXAMPLE 1:

NOTE - TASKS may be worked out of order **AND/OR** repeated, **BUT** Work Steps within each **TASK SHALL** be worked in order.

The NOTE format in example 1 would cover a situation where tasks (which have sub-steps that must be performed in sequential order) can be performed in any sequential order or repeated. Typically this NOTE would be entered into the Scope section of the work package.

EXAMPLE 2:

The NOTE must clearly state which work instruction steps can be worked out of sequence, concurrently, or simultaneously.

NOTE - The following steps 5.1 through 5.3 can be performed in any sequence and/or in parallel at each excavation location. However sub-steps must be performed in sequence. The remaining steps must be performed sequentially after completion of major steps 5.1 through 5.3.

The NOTE format in example 2 would cover a situation where primary steps 5.1, 5.2 and 5.3 (which have sub-steps that must be performed in sequential order) can be performed in any order and are being performed identically at each excavation. This same approach can be used if the same action is being taken on multiple components. This would allow the work team to be working these major steps in multiple excavations (or on multiple components). Upon completion of steps 5.1 through 5.3 for each excavation, the remaining steps are performed in sequence.

If sub-steps must be performed in a specific order, they are numbered sequentially (See Example 1 below).

If sub steps can be worked out of sequence, concurrently, or simultaneously, this can be identified by listing the sub-steps without numerical sequencing by using bullets. The key is ensuring clear communication of the out-of-sequence option at the task, primary step and sub-step level (See Example 2 below).

EXAMPLE 1:

5.5 Entry into XYZ pit as follows:

5.5.1 **ENSURE** temporary drain seal assembly is installed

5.5.2 **ENSURE** a confined space evaluation of the XYZ pit has been performed and posted accordingly

5.5.3 **INSTALL** ladder for access to the XYZ pit floor.

EXAMPLE 2:

5.2 **CONFIRM** the tank ventilation system is operating in accordance with the following:

- **CONFIRM** the fan running light is ON

- **ENSURE** the tank isolation valve is OPEN
- **CONFIRM** differential pressure gage 241XYZ-VTP-PDI-204 located on the inlet station for the 241-XYZ-101 tank, indicates flow of D/P > 2.0 PSIG.

If an action must be performed at a particular geographical location, it should be ensured that the location information is identified.

If a work step requires that data be taken, instruction for recording the information should be provided.

When repetitive work is performed on multiple components, it is necessary to format the work instructions in a manner that allows easy tracking of progress. When data is being collected during the conduct of the work, it is also necessary to provide space for collecting the required data for each component. The use of data tables may be necessary to provide space for data collection. If tables for data collection will not be used, it may be necessary to copy the series of steps being performed for each component multiple times and provide data collection at the end of each series.

For work steps that require independent verification (per TFC-OPS-OPER-C-34), include the following:

- Component identification
- Desired position
- Final position
- Sign, print, and date, or initials with signature sheet of positioner and verifiers for each item
- Supervisory review.

3.9.5.5 Use of NOTEs

NOTEs are used to clarify information or provide necessary definitions and do not contain action statements. Formatting is as follows:

“NOTE” typed in all capitals, followed by a space, a hyphen, an indent, and text indicates a NOTE. Align the left margin of the word “NOTE” with the number of the step the NOTE references. A NOTE shall not be divided with a page break or place a NOTE on a different page than its associated step.

NOTEs may be numbered if more than one NOTE is at the same location.

NOTEs must precede the step to which they refer.

3.9.5.6 Conditional Statements

If there is a decision to perform an action step based on the occurrence of a condition or a combination of conditions, that action is a Conditional Statement. Examples of permissible terms to establish the conditional logic within an action step are:

- IF
- AFTER
- WHEN
- AND
- OR.

The conditional logic established applies only to the single step containing the logic terms and any sub-steps of that work step. The requirement to perform subsequent steps is not affected by the outcome of the logic unless the user is directed to branch to another work step in the work instruction.

- In all cases, the condition(s) is described first and is followed by the action.
- Minimize the use of conditional steps.
- IF statements are normally used to identify a possible condition. The word "then" is implied and may be omitted.

Articles (a, an, the) shall be included when referring to a general item; omit the article when referring to specific items (for example, "**OPEN** <u>the</u> valve," "**OPEN** valve PR-4").

3.9.5.7 Use of Units

Units in the work instructions that match those of the measuring and test equipment (M&TE) available to the worker shall be used. Metric units shall not be given unless the source device reads in metric. Sources for potential conversion and calculation errors should be eliminated.

a. Limits and tolerances consistent with the readable accuracy of the instrumentation shall be used.

b. Specific ranges of acceptable values shall be used, rather than single target values to prevent the need for mental arithmetic.

   - The target value may be specified with the bounded range following in parenthesis (e.g., 800 (790 – 810) mV).
   - Bounded ranges stated with endpoints or a midpoint plus or minus (±) an amount shall be used, rather than a midpoint plus or minus a percentage (e.g., 48 - 52 psi or 50 ± 2 psi vice 50 ± 4%). This helps eliminate calculation errors

- Open-ended ranges can be expressed as "less than (<)," "greater than (>)," "less than or equal to (≤)," "greater than or equal to (≥)."

The full nomenclature for a piece of equipment shall be specified the first time that piece of equipment is cited in the work document. A shortened form of the name in a consistent manner may be used for further citations. To avoid confusion, the same shortened nomenclature shall not be used for different equipment items.

3.9.5.8 Hold Points

The organizations authorized to include hold points in technical work documents (i.e., procedures or work orders) are Radiological Control (see TFC-ESHQ-RP_RWP-C-03 for radiological hold point criteria) and Quality Assurance. Other organization certification signatures may be designated in technical documents but they will not be hold points.

If hold points are required in the work instructions, place the hold point identification at the work instruction step or in an attachment to clearly correspond to the hold point step.

- The format in this Standard should be used to identify the hold points in the work instructions. The initial hold point identification should be placed at the work instruction step and, if needed, subsequent/repeatable hold points on an attachment that clearly corresponds to the initial hold point step.

- The work instructions can contain the distinct provisions for the hold point to be marked as not applicable (N/A). Work orders or procedures may contain hold points that are conditional (e.g., a hold point step need only be performed if a certain action is required or a condition encountered).

- The hold point will contain only one action to be performed.

- The action to be performed will be clearly stated.

Sample Hold Point Formats

If using Word, then use a box like below:

(QA) Hold Point
Verify that relay wiring conforms to the configuration described in Section A, ECN 12345, including color-coding and terminal contacts.

_____
Printed Name (First and Last)

_____
Signature

_____
Date

In other text editors, like Enterprise Asset Management (EAM), the following format is allowed:

XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX

(QA) Hold Point

Verify that relay wiring conforms to the configuration described in Section A, ECN 12345, including color-coding and terminal contacts.

_____
Printed Name (First and Last)

_____
Signature Date

XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX

3.9.5.9 Performance Verification Sign Offs

Performance verification may be required for certain criteria. If verification is required, criteria/levels are communicated and a block added for sign off by the performer to show evidence the criteria is satisfied.

3.9.6 Testing and Restoration

Post-Maintenance & Post-Modification Testing (PMT) verifies that components and systems are capable of performing their intended functions when returned to service following maintenance or modification. Certain inspections and checks that satisfy PMT requirements follow activities conducted during the maintenance or modification phase. These inspections, verifications, or checks are usually an integral part of the detailed work instructions or maintenance procedures and need not be repeated. After the maintenance or modification is completed, and additional verifications and tests may be performed, Operations reviews the results of the PMT and confirms the component or system is ready for operation. The PMT activities should be designed and scoped to assure that the functionality of the component is verified.

When determined that PMT needs to be prepared, the planner should refer to TFC-ENG-STD-08. The planner obtains input from the engineering organization for determination of the most appropriate functional test and/or the operations organization for the most appropriate operability test. Performance of the PMT is sometimes satisfied through performance of a PM. In all cases, the PMT defined needs to be written in a quantitative and qualitative manner to ensure clear indication that testing is required.

The difference between “operable” and “functional” as it relates to PMT is as follows:

- Operability is strictly defined within technical specifications (e.g., Standard Technical Specifications, Documented Safety Analysis (DSA), Operating Specification Documents, Engineering Standards, and Environmental Permitting Requirements (RPP-16922)).

- Functionality is defined by the Maintenance Specifications.

If the SSC fails its PMT, functionality may not be credited after maintenance is performed, and the PMT should be evaluated by engineering.

Some PMT may be considered minor maintenance and appropriate for a Level 3 work package however, as indicated above, PMT may also sometimes be covered by an approved PM or surveillance procedure where a Level 2 work package would be used. If a pre-approved procedure is not available and specific instructions are needed for the PMT then these instructions would be included in the Level 1 work package. If a Level 2 work package is being used to satisfy PMT after repair work on a Level 1 work package, it is appropriate to reference the Level 2 work package number in the Level 1 work instructions to have traceability to PMT actions following completion of maintenance.

Operations restoration steps may also be included in the testing and restoration section based on input from Operations. Typically restoration is accomplished through performance of an operations procedure; however, restoration may also at times be accomplished as part of an overall outage recovery effort. Input must be obtained from operations on appropriate restoration actions to include in this section of the work instructions.

Restoration also includes housekeeping and waste disposal activities.

3.9.7 References/Source Documents

References and Source documents need to be considered during the planning phase; however, required references and other source documents are attached to the EAM work order record and not required to be listed in the work instructions.

A listing of source documents and references used to compile and assemble the work package should be included as outlined below:

- Existing maintenance work instructions and/or procedures
- Replacement part information (e.g., vendor manual, assembly drawing, Bill of Material)
- Component identification (e.g., P&ID, electrical drawings)
- Technical Specification
- Lessons Learned (with key points highlighted)
- Limiting condition for operations, if applicable.

Administrative procedures used in the development of the work package should not be referenced as attachments, in the body of the work instruction, or included in the work package.

3.10 Work Package Review and Approval

The work package review and approval process provides opportunity to ensure technical accuracy and overall workability of the planned activity. Using the Work Order Review and Approval application, the planner can ensure all required personnel have an opportunity to review the work package and apply their approval. Identification of required approvers can be found utilizing TFC-OPS-MAINT-C-01, Attachment B. Various reviews and approvals are performed depending on the type of work package and the scope of the work.

Changes to approved work packages are performed as specified in TFC-OPS-MAINT-C-01.

3.11 Work Package Layout

Work package support documents can be assembled as noted in Figure 1. However, depending on the packaging style (e.g., 3-ringer binder, manila folder), support document locations may vary.

Figure 1. Example Work Package Layout.

Work Change Notice Work Document/Instructions Job Hazard Analysis Lockout/Tagout Authorization Caution Tag Installation/Removal Administrative Lock Establishment/Removal Lifted/Landed Lead Record 1L	Work Record Pre-Job Briefing Checklist Pre-Job Briefing/Attendance Roster 1R
Pre-Approved Procedures/Data Sheets Critical lift procedure 2L	Radiological Work Permit Glove Bag/Containment Checklist Other Permits (Excavation, Hotwork, etc.) 2R
Applicable Engineering Change Notices Bill of Material Certified Vendor Information 3L	Dome Load Evaluation/ route maps Material Safety Data Sheets Waste Planning Checklist 3R
Acceptance Test Procedure/Operational Test Procedure 4L	Drawings Other support documents 4R

3.12 Task Specific, System Specific, and Defense-in-Depth (DID) Information

Specific activities or specific systems require additional Defense-in-Depth information to be utilized in the development of detailed work instructions. The following subsections offer examples.

3.12.1 Compressed Air System High Temperature Protection DID Controls

For work activities that authorize connection of compressed air systems to safety-significant waste transfer primary piping systems, Hose-in-Hose Transfer Line (HIHTL) systems, and isolation valves for double valve isolation, temperature monitoring of the compressed air system discharge temperature is required to verify that the temperature is ≤180 ºF. Temperature monitoring instrumentation is required to be calibrated in accordance with the requirements of TFC-PLN-02 (see RPP-13033, Table 3.3.2.3.2-2). This requirement protects the design temperature of the safety-significant waste transfer primary piping systems, HIHTL systems, and isolation valves for double valve isolation.

3.12.2 Erecting Temporary Tent Structures

Report RPP-RPT-47003, Temporary Structures Wind Tie-Down Guide, describes standard TOC criteria for appropriate tie-down requirements for temporary tent structures to resist high winds. When temporary tent structures are required, work with engineering to develop instructions that follow the guidance contained in the report.

When containments installed have a retractable roof option, a precautionary statement is added to the work instructions to ensure the roof reel is secured any time it is not being adjusted. Taking this action protects from possible release or damage due to high winds.

3.12.3 Foreign Material Exclusion (FME)

When work involves opening and closing plant systems, instructions need to be included for installation and removal of temporary covers or other protective measures to exclude foreign material and to preserve cleanliness. Engineering should specify the type of Foreign Material Exclusion (FME) barriers to be used (e.g., caps/plugs, blanks, covers) Quality Assurance (QA) inspectors are responsible for verifying and documenting that no foreign material is present prior to final system closure for Safety Significant systems or General Service systems that interface with a Safety Significant system. QA will provide input during work instruction development of content that needs to be added to accomplish this verification. Work instructions should include an action to ensure FME barriers have been removed and accounted for as part of the restoration/completion of work.

3.12.4 Interfacing Water System High Temperature Protection DID Controls

For work activities that authorize connection of interfacing water systems to safety-significant waste transfer primary piping systems, HIHTL systems, and isolation valves for double valve isolation, the interfacing water temperature is required to be ≤180 ºF (see RPP-13033, Table 3.3.2.3.2-2). This requirement protects the design temperature of the safety-significant waste transfer primary piping systems, HIHTL systems, and isolation valves for double valve isolation.

3.12.5 Valve Manipulation

When valve manipulations are required, the valve positioning is identified in individual work steps or in a valve line-up check sheet to assure clear direction. Diagrams may be used for overall understanding of the system line-up but not to direct the individual valve manipulations. For manipulating waste transfer valves listed in technical procedure TO-020-610, to ensure proper seating and or to ensure that no damage occurs, the technique and controls listed in TO-020-610 must be incorporated into the work steps or in a valve line up check sheet referenced in the work instruction.

3.12.6 Asbestos Hazards During HEPA Filter Change-out

When changing HEPA filters on the exhausters for double shell tanks, possible asbestos contamination of the HEPA filters needs to be addressed. During riser gasket abatement, use of the negative pressure provided by the exhauster as an engineering control could introduce asbestos fibers into the HEPA filters. It is necessary to address the asbestos hazards by requiring an Asbestos Work Permit (Site Form A-6003-870) and utilizing an Industrial Hygiene Sample Plan for exposure sampling. The Job Hazard Analysis should address asbestos hazards. Work instructions should incorporate the appropriate Precautions/Limitations and controls to ensure asbestos hazards or appropriately mitigated.

3.12.7 Water Hammer (TOC Best Management Practice)

For work activities that authorize connection of interfacing water systems to safety-significant waste transfer primary piping systems (i.e., flushing safety-significant waste transfer primary piping systems and leak testing of safety-significant waste transfer primary piping system connections with water), only the following operations that close valves during fluid flow (i.e., that stop flow) are allowed:

- For flushing operations not using a water skid, only the interfacing water system supply valve shall be closed to terminate the water source.

- For leak tests of waste transfer primary piping system connections not using a water skid, only the interfacing water system supply valve shall be closed to terminate the water source, with one exception. If a pressurized leak test is needed to meet environmental requirements, closing a valve with water flowing to pressurize the system at the connection is also allowed.

In addition, positive displacement pumps on water trucks supporting waste transfer line flushes and leak testing of waste transfer primary piping system connections are prohibited. Waiving of these TOC best management practices (i.e., allowing closing of other valves during fluid flow) is allowed only on a case-by-case basis with the concurrence of the Production Operations Manager (or equivalent) or the SST Retrievals Manager (or equivalent) and shall be documented in accordance with TFC-BSM-AD-C-01. These TOC best management practices are from the Justification for Continued Operation (JCO) for Potential Water Hammer Conditions (JCO No. TF-11-01).

Based on direction from the Plant Review Committee (PRC), if a planned valve closure during fluid flow is required (see above), a camera must be installed to observe movement of piping due to a potential water hammer. The location of the camera is determined based on engineering judgment of where the movement resulting from the water hammer is expected. The actual observed movement of piping will provide data for use in a planned, more rigorous analysis of water hammer. Installation of the cameras is to be included as a prerequisite to performance of the valve closure.

3.12.8 Tanks that Utilize an Extended Reach Sluicer System (ERSS) Unit

When work activities involve breaching of tank containment on tanks that utilize an ERSS unit, positive control (e.g., signature verification that the pumps are shut down) shall be identified as an additional Defense-in Depth control to eliminate the potential for an inadvertent pump start. ERSS pump operation with the tank containment breached could result in placing the workers and environment at risk by contact with a stream of waste inadvertently exiting the tank.

3.12.9 Use of Ahlberg Lights

When work activities utilize an Ahlberg light for illumination, it is important to incorporate the requirements of the vendor manuals precautions and warnings into the work package. Ahlberg lights require the use of a GFCI with an open neutral. If the Ahlberg light is powered using a portable generator, the generator must be grounded to earth, as recommended in the vendor manual.

3.12.10 Removal of Abandoned/Deactivated Equipment

Depending upon the actual equipment configuration and accuracy of facility drawings, there is an increased potential for unidentified stored energy sources. These sources could be electrical, mechanical, or fluid/air energy sources that may be present during the removal of abandoned/deactivated equipment. When planning this type of activity, additional consideration shall be given to:

- Electrical energy sources - Depending upon actual equipment configuration and accuracy of facility drawings, there is an increased potential for unidentified energy sources to be present during removal of abandoned/ deactivated equipment. When planning this type of activity, additional consideration shall be given to:

  - Use of alternate methods of verification (e.g., proximity probes, non-contact probes, circuit tracers, current sensing probes) to detect energized electrical prior to initial cutting of known or discovered electrical wiring. If utilizing the alternate methods of verification as a defense in depth control, a WARNING will need to be placed in the work instructions to clarify that the use of the device(s) is not to be used to verify electrically safe work conditions for the purpose of hazardous energy control.

  - Providing visible air gaps for all utility connections to the abandoned equipment prior to full-scale removal.

  - Use of a non-contact proximity tester to detect energized electrical prior to cutting of lagged pipes or materials with the potential to contain hidden electrical hazards (e.g., lagged exterior water piping). If utilizing the alternate methods of verification as a defense in depth control, a WARNING will need to be placed in the work instructions to clarify that the use of the device(s) is not to be used to verify electrically safe work conditions for the purpose of hazardous energy control.

  If utilizing the non-contact proximity tester as a defense in depth control, a WARNING will need to be placed in the work instructions to clarify that the use of the device is not to be used to verify electrically safe work conditions for the purpose of hazardous energy control.

- Mechanical energy sources – Deactivated equipment may be subject to unplanned movement caused by tension springs or other similar devices. Planners should work with Engineering and utilize current and possibly historical facility and system drawings along with operational history to assist in identifying potential stored mechanical energy. Working with the planning team, appropriate use of WARNINGS and other controls should be utilized in the work instructions.

- Fluid/Air energy sources – Equipment that has contained liquids (e.g., hydraulic fluid, caustic, condensate, etc.) can present multiple hazards. The potential for chemical, contamination, or biological hazards exists with these fluids and should be considered when removing deactivated equipment. Hydraulic, pneumatic, and other fluid systems could hold pressure in cylinders, accumulators, or similar equipment. Detailed instruction on how to drain the system or release pressure should be incorporated into work instructions whenever potential fluid hold up or pressure sources could exist.

3.12.11 Work in Proximity to Potentially Flammable Atmospheres

Waste generates flammable gas, primarily hydrogen, through radiolysis of water and organics and thermolytic decomposition of organic compounds and may be trapped in an unvented space. Also, in Waste Group A[1] tanks, gas trapped in waste sludge may be released unexpectedly in a spontaneous gas release event and temporarily overwhelm the ventilation system with a potentially flammable mixture.

NOTE: Breaching an uncharacterized system, one in which the contents are unknown, requires additional health safety measures and precautions.

Work packages that incur the following potential for flammable gas shall be screened in accordance with TFC-ENG-FACSUP-P-17 and include an approved screening form:

- That breach any system containing radioactive materials or residual radioactive contamination, or
- That intrude into headspace of a Waste Group A tank or gas-trapping spaces directly above.

4.0 DEFINITIONS

Assumption. A belief, guess, theory, idea, hypothesis, or notion not based in fact and if incorrect can cause immediate adverse consequences.

Irreversible Harm. A significant consequence resulting from a single condition or action affecting people, the environment, or facility that has an immediate negative impact and cannot be reversed or undone.

Objective Evidence. Information based on facts that can be proved through analysis, measurement, and other such means of research.

5.0 SOURCES

5.1 Requirements

No documents external to this procedure are required for performance.

5.2 References

1. Activity Level Work Planning and Control Processes – Attributes, Best Practices, and Guidance for Effective Incorporation of Integrated Safety Management and Quality Assurance, National Nuclear Security Administration, January, 2006.
2. DOE G 433.1-1A, “Nuclear Facility Maintenance Management Program Guide.”
3. DOE O 422.1, “Conduct of Operations.”

[1] See HNF-IP-1266, “Tank Farms Operations Administrative Controls,” Appendix 5.A “Waste Group Designations.”

4. DOE-STD-1029-92, "Writers Guide for Technical Procedures."

5. HNF-IP-1266, "Tank Farms Operations Administrative Controls."

6. Maintenance Work Package Planning Guidance Technical Report (1011903), Copyright © 2005 Electric Power Research Institute, Inc.

7. TFC-ENG-FACSUP-P-17, "Flammable Gas Activities Ignition Source Control."

8. TFC-ENG-STD-08, "Post Maintenance Testing."

9. TFC-ESHQ-RP_RWP-C-03, "ALARA Work Planning."

10. TFC-ESHQ-S_SAF-C-02, "Job Hazard Analysis."

11. TFC-OPS-MAINT-C-01, "Tank Operations Contractor Work Control."

12. TFC-OPS-MAINT-C-02, "Pre-Job Briefings and Post-Job Reviews."

13. TFC-OPS-OPER-C-34, "Independent Verification."

14. TFC-PLN-05, "Conduct of Operations Implementation Plan."