



Department of Energy
Washington, DC 20585

December 8, 2014

MEMORANDUM FOR JEFFREY D. FEIT
PROGRAM MANAGER
TECHNICAL STANDARDS PROGRAM
OFFICE OF NUCLEAR SAFETY
OFFICE OF ENVIRONMENT, HEALTH, SAFETY AND
SECURITY

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SUBJECT: Cancellation Notice for Department of Energy
Standard 1029-1992, *Writer's Guide for Technical Procedures*

The Department of Energy (DOE) Office of Nuclear Safety recommends the cancellation and archiving of the DOE Standard (STD) 1029-1992, *Writer's Guide for Technical Procedures*, and submits this proposal for a 60-day review and comment period in accordance with Section 4.4 of Technical Standards Program Procedures 7-2013, *Maintaining DOE Technical Standards*.

Based on discussions with DOE field element personnel and contractors, the Office of Nuclear Safety concluded that the purpose of DOE-STD-1029-1992 is adequately fulfilled by the Procedure Professionals Association (PPA) voluntary consensus standards PPA AP-907-005 Rev 1, September 2011, *Procedure Writers' Manual*, and PPA-907-001 Revision 1, September 2011, *Procedure Process Description*, available at: <http://www.ppaweb.org/documents/PPA-AP-907-005.pdf>. These consensus standards were developed with DOE participation, and several field elements currently use them.

In accordance with DOE Order 252.1A, *Technical Standards Program*, Public Law 104-113, *National Technology Transfer and Advancement act of 1995*, and the Office of Management and Budget Circular A-119, *Federal Participation in the Development and Use of Voluntary Consensus Standards and in Conformity Assessment Activities*, the Department is required to use voluntary consensus standards to the maximum extent possible in the conduct of its activities. DOE-STD-1029-1992 is not invoked as a requirement in any DOE directives, and if cancelled it will be archived and remain available on the Technical Standards Program Website. A crosswalk of content in DOE-STD-1029-1992 to the PPA Standards is attached.

The point of contact for this document is Earl Hughes, Office of Nuclear Facility Safety Programs. Mr. Hughes can be reach at (202) 586-0065, or by e-mail at earl.hughes@hq.doe.gov.

Attachment



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| DOE STD 1029 | PPA AP-907-005 |
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| <p>INTRODUCTION A primary objective of operations conducted in the U.S. Department of Energy (DOE) complex is safety. Procedures are a critical element of maintaining a safety envelope to ensure safe facility operation. This DOE <i>Writer's Guide for Technical Procedures</i> addresses the content, format, and style of technical procedures that prescribe production, operation of equipment and facilities, and maintenance activities.</p> | <p>Forward (Similar in context)</p> |
| <p>Organization of this Guide This guide for writing technical procedures is presented in five sections.</p> | <p>Table of Contents (Similar)</p> |
| <p>1.2 Purpose of this Guide This writer's guide establishes the recommended process for developing technical procedures that are accurate, complete, clear and consistent. It provides guidance for</p> <ul style="list-style-type: none"> • Developing a procedure basis • Planning, organizing, and structuring • Developing content and establishing format • Writing action steps. | <p>1.0 Purpose and Scope (Similar) This standard (PPA AP-907-005, <i>Procedure Writer's Manual</i>, should be used in conjunction with PPA AP-907-001, <i>Procedure Process Description</i>.</p> |
| <p>1.4 Involvement of Operational Organizations in Procedure Development Procedures are written for facility operational personnel; therefore, operators are an important source of information when developing procedures. Personnel from the operational organization should be involved in the process from the initial decision to write a procedure through the review, verification, and validation of the procedure.</p> | <p>Implicit, PPA AP-907-001, "Procedure Owner" and Subject Matter Experts to be involved in the process from the initial decision to write a procedure through the review, verification, and validation of the procedure.</p> |

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| <p>2.0 ESTABLISHING THE BASES FOR PROCEDURES Because procedures are a critical element of maintaining a safety envelope, they must be based on the same facility design bases, design verification and functional test results, safety analyses, and operating limits and surveillance requirements used to establish the safety envelope. There are at least three pertinent bases to consider for the development of the technical procedure, the management control basis, technical basis, and design basis.</p> <p>2.1 Research and Planning Process</p> <p>2.2 Procedure Requirements</p> <p>2.3 Facility Configuration</p> <p>2.4 Process Analysis</p> <p>2.5 Develop the Process and Activities</p> <p>2.6 Assemble the Results of the Research into the Procedure Basis</p> <p>2.7 Prepare a Revision History</p> | <p>Technical Basis reviews are covered by the required 10 CFR 50.59 and 10 CFR 72.48 reviews specified in Section 4.4.1 of AP-907-001.</p> <p>PPA AP-907-001 Section 4.3 and Attachment 1 address sections 2.1 through 2.6.</p> <p>2.7 Revision History (Alteration Package) is addressed in AP-907-001 Definitions and Sections 4.5.1 and 4.7.1.2.</p> |
| <p>3.0 Content and Format 3.1 General Content and Format Guidelines This section discusses the technical subject matter content and organization of a procedure. It also defines the format of procedure pages, headers, and other elements. All types of procedures are not within the scope of this writer's guide. While sections within this writer's guide may apply to other than technical procedures, writers should exercise discretion when applying the guidance presented.</p> | <p>4.1 General (Similar)</p> <p>4.2 Procedure Designation (Not addressed in 1029)</p> |

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| <p>3.1.1 Appropriate Level of Detail Writing at the appropriate level of detail is the key to successful communication with procedure users. For ease of use and to reduce distraction and confusion, only include information in the procedure that relates directly to completing the task.</p> <p>[1] Write procedures to a level of detail consistent with the qualifications and training of the expected users. Job task analyses and training records provide information useful in assessing the level of detail requirements. When in doubt, write to the lowest common denominator.</p> <p>[2] Provide a level of detail that takes into account the following variables:</p> <p>[3] Determine whether the amount and kind of information provided are adequate for intended users by answering the following questions:</p> <p>[4] Ensure that the decision making required in the procedure is consistent with the user's qualifications and level of authority. This approach permits tasks to be performed with minimum supervision.</p> <p>[5] Exclude information that is useful only to reviewers or other persons not involved in performing the procedure.</p> | <p>Addressed in PPA AP-907-005 Section 4.28 and PPA AP-907-001, Section 4.3.5.</p> |
| <p>3.1.2 Consistency One of the most important principles in writing effective technical procedures is to maintain consistency in procedure style, format, and organization, both within and among procedures. Inconsistencies can result in users attributing differences in meaning to spurious differences in presentation. Consistency allows users to move through documents without having to waste effort interpreting the style of presentation for each section they encounter.</p> | <p>Addressed in PPA AP-907-005 Section 4.29 and PPA AP-907-001 Section 4.3.6.</p> |
| <p>3.1.3 Writing Style and Language Narrative prose and paragraph style are inappropriate for writing procedures. Users of procedures will likely be working under difficult, sometimes very stressful conditions, and thus procedures should be written so that users can grasp the intended meaning quickly and easily.</p> | <p>Addressed in Section 4.22 – 4.33.</p> |

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| <p>3.1.4 Numerical Information</p> <p>[1] Maintain consistency in using Arabic numbers (e.g., 0, 1, 2) and spelled-out numbers (e.g., zero, one, two).</p> <p>[2] Use spelled-out numbers when one number without a specified unit of measure is followed directly by one with a unit of measure.</p> | <p>Addressed in Section 4.27.1.</p> |
| <p>3.1.5 Instrumentation/Component Information</p> <p>[1] Refer to instruments and components using both the equipment name and number. The equipment name can be the verbatim equipment label, a paraphrased equipment label or some other name, depending upon which is the most familiar to users. Ideally, there should only be one name in use for any given piece of equipment. Set the numeric identifier apart from the equipment name (e.g., by placing it in braces after the common usage name as in: "Open both Vessel Vent valves {GH-32-1 and GH-32-2}.").</p> <p>[2] Do not require users to interpret ambiguous descriptors, such as "approximately" and "slowly" when referring to instrument information.</p> <p>[3] Specify numbers in procedures at the same precision and the same units of measure that they are presented on instrument panel displays.</p> <p>[4] Express consecutive acceptable values as a range of values rather than in terms of tolerance bands. Tolerance bands require additional mental calculation on the part of the users, increasing the probability of error.</p> | <p>Addressed in Section 4.33 (step 4.33.3a)</p> |
| <p>3.1.6 Typeface</p> <p>The readability of type is affected by its font (typeface, point size, and weight), and case (capitalized versus uncapitalized).</p> <p>[1] Select typeface font and size so that it is readable under the worst conditions anticipated. Ensure that the type size is large enough for users to read at anticipated distances and lighting conditions.</p> <p>[2] Use a mixture of both upper and lower case in text. Only use capital letters for emphasis of single words or phrases, not for an entire block of text.</p> | <p>Addressed in Section 4.4.</p> |

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| <p>3.1.7 Page Headers and Page Numbering Each page of the procedure should include a main page header that fits at the top of the page and clearly distinguishes a specific identity for each procedure. The identity of a procedure should include a unique number and the unit (building or system) to which it applies.</p> | <p>Addressed in Sections 4.5 and 4.6.</p> |
| <p>3.1.8 Procedure Titles [1] Write procedure titles that are concise, clear, and descriptive of the system, equipment, process, or activity. [2] Write procedure titles that are short and descriptive enough to permit the user to easily identify the procedure and activity to which the procedure applies. [3] Write unique procedure titles to assist the user in identifying the correct procedure.</p> | <p>Not Addressed</p> |
| <p>3.1.9 Headings Headings break the text of the procedure into sections by grouping related action steps. Section headings help users locate information in the procedure, break up long series of actions into manageable chunks, and track their progress through the procedure, especially when branching to other sections.</p> | <p>Addressed in Section 4.9</p> |
| <p>3.1.10 Action Step Numbering Action steps reduce a task or activity to a discrete set of instructions. Action step numbering identifies individual action steps and their sequence.</p> | <p>Addressed in Section 4.9.</p> |
| <p>3.2 Procedure Organization A technical procedure is organized to provide the procedure user with all the needed information to accomplish an activity.</p> | <p>Addressed in Sections 4.11 and 4.13.</p> |
| <p>3.2.1 Coversheet The coversheet provides a means for the user to verify that the procedure is appropriate for the task at hand.</p> | <p>Addressed in Section 4.11.</p> |

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| <p>3.2.2 Revision Status It is essential that users follow the most current version of a procedure. Document control systems typically ensure the most recent versions are available. Ensure the latest revision is used by including the revision number on each page of the procedure. Draw the user's attention to changes (additions, corrections, or deletions) made in the procedure. A clear, simple means of marking these changes is required.</p> | <p>Addressed in Section 4.13.12.</p> |
| <p>3.2.3 Table of Contents The table of contents helps users locate the portions of the procedure they need for a specific operation and is useful for locating appendixes. A table of contents is recommended.</p> | <p>Addressed in Section 4.12.</p> |
| <p>3.3 Introduction The introduction should address the purpose, scope, and applicability of the procedure.</p> | <p>Addressed in Section 4.13.</p> |
| <p>3.4 Precautions and Limitations Failure to include precautions and limitations within the procedure can cause a severe injury to, or the death of, the procedure user and/or serious damage to equipment. The precautions and limitations section delineates precautions that affect the entire procedure or that occur at more than one point in the procedure.</p> | <p>Addressed in 4.13.7.</p> |
| <p>3.5 Prerequisite Actions The prerequisite actions section identifies actions that must be completed by the user and requirements that must be met and signed off before the user continues with the procedure.</p> | <p>Addressed in 4.13.8.</p> |
| <p>3.5.1 Planning and Coordination The planning and coordination section includes information on activities that must be undertaken to plan and coordinate the performance of the procedure.</p> | <p>Not Addressed (This is addressed in ConOps)</p> |

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| <p>3.5.2 Performance Documents Direct the user to obtain all other documents required to perform the procedure, such as drawings, approved vendor manuals, and other procedures that may be referenced in the base procedure. Listing these references in the prerequisite actions subsection ensures that the documents are available at the job site when needed. Where feasible, however, include such material in the base procedure to lessen the number of references the user must refer to.</p> | <p>Addressed in Section 4.13.4.</p> |
| <p>3.5.3 Special Tools and Equipment, Parts, and Supplies List special tools, measuring and test equipment, parts, and supplies required to perform the procedure. Strict attention to the completeness and correctness of this section is extremely important. For example, failure to specify a necessary item could result in costly equipment downtime or using a substitute for a specialized tool could damage equipment. It may be appropriate to provide some of this information in tables. Lists of material may be more appropriately placed in an appendix than in this subsection.</p> | <p>Addressed in Section 4.13.8.</p> |
| <p>3.5.4 Field Preparations Provide instructions for preparatory field activities that must be completed before continuing with the procedure.</p> | <p>Mentioned but no specific guidance (4.13.8).</p> |
| <p>3.5.5 Approvals and Notifications The approvals and notifications section identifies approvals and notifications that must occur before the actions in the procedure begin. Approvals and notifications related to specific action steps in the procedure are placed adjacent to the affected action step.</p> | <p>Mentioned but no specific guidance (4.13.8).</p> |
| <p>3.5.6 Terms, Definitions, Acronyms, and Abbreviations Avoid using a separate section devoted to terms, definitions, and acronyms in technical procedures. Users should be adequately trained and familiar with the terms used in the procedure. Facility-specific glossaries of terms, definitions, acronyms, and abbreviations should be maintained to ensure consistent use of these elements and consistent interpretation by the user.</p> | <p>Addresses Definitions in Section 4.13.5 and Acronyms and Abbreviations are in Section 4.22.</p> |

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| <p>3.5.7 Responsibilities In technical procedures, responsibilities are implicit in the action statements (see Section 4 of this guide for information about writing action statements). Only action steps that involve personnel in addition to the user need specify the person responsible for a specific action. Therefore, because the procedure has a limited number of users, a separate responsibilities section is not warranted.</p> | <p>Addressed in Section 4.13.6.</p> |
| <p>3.6 Performance Sections The performance sections contain the action steps that prescribe the principal tasks and subtasks of the procedure.</p> | <p>Addressed in Section 4.13.9.</p> |
| <p>3.7 Post-performance Activity The post-performance activity section stipulates actions needed to close out the activity including testing, restoration, and compiling results.</p> | <p>Addressed in Section 4.13.9 and 4.13.10.</p> |
| <p>3.7.1 Testing If operability of equipment has been affected while performing a procedure and operability has to be verified before returning the equipment to service, include action steps that specify these tests.</p> | <p>Addressed in Section 4.13.10 (vaguely).</p> |
| <p>3.7.2 Restoration Provide action steps to specify and record the return of all affected structures, systems, or equipment to the desired configuration.</p> | <p>Addressed in Section 4.13.9 (vaguely).</p> |
| <p>3.7.3 Results Provide instructions to summarize the results of the procedure</p> | <p>Addressed in Section 4.13.10 (vaguely).</p> |
| <p>3.8 Records Records generated by a procedure are maintained to document the tasks completed by performing the procedure. Administrative controls establish requirements for, and control of, records. Post-task analyses of the procedure require that the conditions of performance and the personnel involved are clearly recorded so lessons can be learned if adverse consequences occur.</p> | <p>Addressed in Section 4.13.11.</p> |

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| <p>3.9 Source Requirements Source requirements are requirements implemented by the procedure. There should be a cross-reference between these requirements and the parts of the procedure which implement them. Source requirements are identified in this way to alert users who are making an expedited procedure change.</p> | <p>Addressed in Section 4.19.</p> |
| <p>3.10 Appendixes Provide appendixes when the material and function of the procedure require them. Appendixes are part of the procedure; number pages to show they are a continuation of the main body of the procedures. In addition, number appendixes independently to ensure all pages are available if the appendix is detached from the main body of the procedure. Examples of items that may be placed in an appendix are forms, tables, figures, graphs, and some checklists that are too large to incorporate in the sequence of action steps.</p> | <p>Addressed in Section 4.14.</p> |
| <p>4 WRITING 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?” Additional elements, such as cautions and condition statements, add precision to instructions.</p> | <p>Addressed in Section 4.31.</p> |
| <p>4.1 Writing Basic Action Steps</p> | <p>Addressed in Section 4.31.</p> |
| <p>4.2 Conditional Action Steps Conditional action steps are used when a decision is based upon the occurrence of a condition or a combination of conditions. The use of conditional action steps is extremely important in technical procedures as they structure the decisions required by the operator.</p> | <p>Addressed in Section 4.16.</p> |
| <p>4.3 Non-sequential Action Steps Procedure users should perform the action steps in the order they are written unless they are specifically directed to perform action steps in another order.</p> | <p>Addressed in Section 4.10.3.</p> |

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| <p>4.4 Equally Acceptable Alternative Action Steps Equally acceptable 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.</p> | <p>Addressed in Section 4.16.7.</p> |
| <p>4.5 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.</p> | <p>Addressed in Section 4.15.6.</p> |
| <p>4.6 Concurrent Action Steps Concurrent action steps contain actions that must be performed at the same time. For example, parameters may have to be monitored or checked while the user accomplishes another action, or two performers in different locations may have to execute actions simultaneously.</p> | <p>Addressed in Section 4.16.7.</p> |
| <p>4.7 Continuous Action Steps Continuous action steps are conditional action 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.</p> | <p>Not Addressed</p> |
| <p>4.8 Repeated Action Steps Repeated action steps are simple action steps that must be performed more than once during the execution of a procedure.</p> | <p>Addressed in Section 4.17.4.</p> |
| <p>4.9 Action Steps Containing Verifications, Checks, Notifications, and Data Recording Verification action steps assure that a specific activity has occurred or that a stated condition exists. Manipulation by the user may be required. Check action steps call for a comparison with stated requirements; and no manipulation by the user occurs. Notification action steps require reporting when given criteria are met. Data recording action steps assure that desired data are recorded.</p> | <p>Addressed in Sections 4.17, 4.25 and 4.26.</p> |

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| <p>4.10 Action Steps with Warnings, Cautions, and Notes Warnings alert users to potential hazards to personnel. Cautions alert users to potential hazards to products or equipment. Notes call attention to important supplemental information.</p> | <p>Addressed in Section 4.15.</p> |
| <p>4.10.1 Warnings and Cautions Warnings and cautions attract attention to information that is essential to safe performance; they usually consist of the conditions, design limitations, practices, and procedures to be complied with to avoid loss of life, personal injury, health hazards, or damage to equipment. An industry study of significant events attributed one-fourth of all human performance events to a failure to provide proper warnings and cautions.</p> | <p>Addressed in Section 4.15.</p> |
| <p>4.10.2 Notes Notes call attention to important supplemental information. The information can be a reminder of preparatory information needed to perform the activities of a procedure or action step.</p> | <p>Addressed in Section 4.15.</p> |
| <p>4.11 Action Steps Directing Users Elsewhere— Branching and Referencing To perform a task, sometimes users must branch or reference another procedure, section, or appendix. Branching routes the procedure user to other action steps or sections within the procedure or to other procedures, and the user does not return to the original position. Referencing routes the procedure user to other action steps or sections within the procedure or to other procedures and then back to the original position in the base procedure. 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 it is not appropriate to incorporate that information into the base procedure.</p> | <p>Addressed in Section 4.30.</p> |

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| <p>4.12 Action Steps with Acceptance Criteria Acceptance criteria provide 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).</p> | <p>Addressed in Section 4.13.10.</p> |
| <p>4.13 Action Steps with Placekeeping and Sign Offs</p> | <p>Addressed in Section 4.17.</p> |
| <p>4.13.1 Place-keeping Place-keeping helps users to keep track of their progress in a procedure and reduces the probability of omitting or duplicating action steps. The place-keeping mechanism typically consists of check-off boxes.</p> | <p>Addressed in Section 4.17.</p> |
| <p>4.13.2 Sign Offs Written responses for action steps that require independent verification, inspection, data recording, or documentation of completion can also be placekeeping devices. The use of signatures, initials, check marks, and “N/A” should be defined in site-specific administrative procedures.</p> | <p>Addressed in Section 4.17.</p> |
| <p>4.13.3 Sign Off or Check Off of Conditional Action Steps In some instances, performing an action depends on a condition or combination of conditions. Conditional action steps are introduced by the words IF or WHEN and are followed by an action.</p> | <p>Addressed in Section 4.16.</p> |
| <p>Appendix A: Worksheets</p> | <p>The intent is captured in Sections 4.25 (Checklists) and Section 4.26 (Data Collection)</p> |

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| <p>Appendix B: Example of a Technical Procedure This appendix contains an example of a technical procedure, "Reservoir Plug Welding", which has been structured and formatted according to this guide. The example demonstrates much of the guidance put forward in this writer's guide and supplements the examples given in the text. The procedure was adapted from an actual procedure in use at a DOE facility. The main purpose in adapting this procedure was to illustrate the structure and formatting guidance, not to demonstrate a technically perfect procedure. The adapters did not have access to the procedural basis and so could not verify the technical assumptions implicit in the adaptation. Parts of the example procedure have been omitted as they provided no additional exemplary material. These omitted sections have been identified in the body of the procedure.</p> | <p>Not Addressed, however examples of each procedure section are included in the body of the procedure.</p> |
| <p>Appendix C: Glossary</p> | <p>Called Definitions in both PPA AP-907-005 and 001. Most are covered between the two documents although some terms are not defined the same as in 1029.</p> |
| <p>Appendix D: Acronyms and Abbreviations</p> | <p>PPA AP-907-005 does provide guidance on acronyms in section 4.22</p> |
| <p>Appendix E: Action Verb List</p> | <p>Addressed in Attachment 1. PPA AP-907-005 Action Verb List is more extensive.</p> |

NOTE: If the column for AP-907-005 just has a section number then it is referring to the 005 document. Where the material in 1029 is covered in AP-907-001 it will state that in the column.