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LTR-NRC-18-62

September 06, 2018

Subject: Transmittal of WCAP-16755-NP, Revision 0, "Operator Time Critical Action Program Standard"  
(Non-Proprietary)

In an effort to understand Westinghouse's position on operator time critical actions the NRC submitted an e-mail request to Westinghouse on August 30, 2018, to provide them with a copy of WCAP-16755-NP, Revision 0, "Operator Time Critical Action Program Standard."

With this letter, Westinghouse has enclosed a copy of WCAP-16755-NP, Revision 0, "Operator Time Critical Action Program Standard," which is being submitted to the NRC for information only, and not for regulatory review, and approval.

Correspondence with respect to this transmittal should be addressed to Edmond J. Mercier, Manager, Fuels Licensing and Regulatory Support, Westinghouse Electric Company, 1000 Westinghouse Drive, Building 2, Suite 256, Cranberry Township, PA 16066.

A handwritten signature in dark ink, appearing to read 'Edmond J. Mercier', with a long horizontal flourish extending to the right.

Edmond J. Mercier, Manager  
Fuels Licensing and Regulatory Support

cc: Ekaterina Lenning (NRC)  
Dennis Morey (NRC)

Enclosures 1) WCAP-16755-NP, Revision 0, "Operator Time Critical Action Program Standard."

Westinghouse Non-Proprietary Class 3

WCAP-16755-NP  
Revision 0

March 2007

# Operator Time Critical Action Program Standard



**WCAP-16755-NP**

# **Operator Time Critical Action Program Standard**

Developed under PWROG Program  
**PA-OSC-0304**

**Peter Sidelinger\***  
Plant Operations

**March 30, 2007**

Reviewer\*: P.J. Marcucci  
Plant Operations

Approved\*: J.L. Duryea  
Manager, Plant Operations Group

\*Electronically approved documents are authenticated in the Electronic Document Management System

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**PWR Owners Group**

**Member Participation\* for PWROG Project PA-OSC-0304**

Utility Member	Plant Site(s)	Participant	
		Yes	No
AmerenUE	Callaway (W)	X	
American Electric Power	D.C. Cook 1&2 (W)	X	
Arizona Public Service	Palo Verde Unit 1, 2, & 3 (CE)	X	
Constellation Energy Group	Calvert Cliffs 1 & 2 (CE)	X	
Constellation Energy Group	Ginna (W)	X	
Dominion Connecticut	Millstone 2 (CE)	X	
Dominion Connecticut	Millstone 3 (W)	X	
Dominion Kewaunee	Kewaunee (W)	X	
Dominion VA	North Anna 1 & 2, Surry 1 & 2 (W)	X	
Duke Energy	Catawba 1 & 2, McGuire 1 & 2 (W), Oconee 1, 2, 3 (B&W)	X	
Entergy Nuclear Northeast	Indian Point 2 & 3 (W)	X	
Entergy Operations South	Arkansas 2, Waterford 3 (CE), Arkansas 1 (B&W)	X	
Exelon Generation Co. LLC	Braidwood 1 & 2, Byron 1 & 2 (W), TMI 1 (B&W)	X	
FirstEnergy Nuclear Operating Co	Beaver Valley 1 & 2 (W), Davis-Besse (B&W)	X	
Florida Power & Light Group	St. Lucie 1 & 2 (CE)	X	
Florida Power & Light Group	Turkey Point 3 & 4, Seabrook (W)	X	
Nuclear Management Company	Prairie Island 1&2, Pt. Beach 1&2	X	
Nuclear Management Company	Palisades (CE)	X	
Omaha Public Power District	Fort Calhoun (CE)	X	
Pacific Gas & Electric	Diablo Canyon 1 & 2 (W)	X	
Progress Energy	Robinson 2, Shearon Harris (W), Crystal River 3 (B&W)	X	
PSEG - Nuclear	Salem 1 & 2 (W)	X	
Southern California Edison	SONGS 2 & 3 (CE)	X	
South Carolina Electric & Gas	V.C. Summer (W)	X	
So. Texas Project Nuclear Operating	South Texas Project 1 & 2 (W)	X	
Southern Nuclear Operating Co.	Farley 1 & 2, Vogtle 1 & 2 (W)	X	
Tennessee Valley Authority	Sequoyah 1 & 2, Watts Bar (W)	X	
TXU Power	Comanche Peak 1 & 2 (W)	X	
Wolf Creek Nuclear Operating Co.	Wolf Creek (W)	X	

\* **Project participants as of the date the final deliverable was completed. On occasion, additional members will join a project. Please contact the PWR Owners Group Program Management Office to verify participation before sending this document to participants not listed above.**

## PWR Owners Group

### International Member Participation\* for Project PA-OSC-0304

Utility Member	Plant Site(s)	Participant	
		Yes	No
British Energy	Sizewell B	X	
Electrabel (Belgian Utilities)	Doel 1, 2 & 4, Tihange 1 & 3	X	
Kansai Electric Co., LTD	Mihama 1, Ohi 1 & 2, Takahama 1 (W)	X	
Korea Hydro & Nuclear Power Corp.	Kori 1, 2, 3 & 4 Yonggwang 1 & 2 (W)	X	
Korea Hydro & Nuclear Power Corp.	Yonggwang 3, 4, 5 & 6 Ulchin 3, 4, 5 & 6(CE)	X	
Nuklearna Electarna KRSKO	Krsko (W)	X	
Nordostschweizerische Kraftwerke AG (NOK)	Beznau 1 & 2 (W)	X	
Ringhals AB	Ringhals 2, 3 & 4 (W)	X	
Spanish Utilities	Asco 1 & 2, Vandellos 2, Almaraz 1 & 2 (W)	X	
Taiwan Power Co.	Maanshan 1 & 2 (W)	X	
Electricite de France	54 Units	X	

**\* This is a list of participants in this project as of the date the final deliverable was completed. On occasion, additional members will join a project. Please contact the PWR Owners Group Program Management Office to verify participation before sending documents to participants not listed above.**

## ACKNOWLEDGMENTS

The Pressurized Water Reactor Owners Group Procedures Working Group would like to recognize the efforts of the participants of the Time Critical Action Standard program. Eleven plants volunteered 17 programs or procedures to provide data for this program. The Procedures Working Group would also like to recognize the Time Critical Action Core Group for the time they spent reviewing and resolving the dozens of comments during the various stages of development of the time critical action standard to assist the Pressurized Water Reactor Owners Group member utilities in addressing the time critical action issue. The Time Critical Action Core Group included Doug Badgero of American Electric Power Company, Bob Bleacher of Constellation Energy, Randy Bodenhamer of Wolf Creek Nuclear Operating Company, Pete Dellarco of Dominion Nuclear CT, Scott Hollingsworth of Duke Power Company, George Murphy of Progress Energy, Bill Russell of STP Nuclear Operating Company, Mike Weiner of Duke Power Company, and Pete Sidelinger of Westinghouse.

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## LIST OF ACRONYMS

B&W	Babcock & Wilcox
CE	Combustion Engineering
PWG	Procedures Working Group
PWROG	Pressurized Water Reactor Owners Group
SGTR	Steam Generator Tube Rupture
TCA	Time Critical Action

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## EXECUTIVE SUMMARY

The Operator Time Critical Action Program Standard program was initiated by the Pressurized Water Reactor Owners Group (PWROG) in response to the Operations Subcommittee concern regarding widespread and significant variations in the various time critical action (TCA) programs at member utilities. This program was undertaken by the Procedures Working Group (PWG) of the PWROG to investigate existing TCA programs and to determine appropriate guidance that could be standardized at member utilities.

Existing TCA programs were collected from PWROG member utilities. Eleven plants provided 17 procedures associated with the TCA program, representing B&W, CE and Westinghouse design plants. These procedures were reviewed to determine program features that could be considered common, as well as features that exist in one or more plant programs, but not all programs.

The Operator Time Critical Action Program Standard was then developed by incorporating the features that provide a strong TCA program that clearly identifies, controls and verifies the ability of the plant to ensure the TCAs can be performed as required. Comments were solicited from the PWG and tracked to ensure resolution. These initial comments were satisfactorily resolved by a PWG core group convened for that purpose. Additional comments were received and resolved in the February 2007 PWG meeting.

Revision 0 of the Operator Time Critical Action Program Standard was endorsed by the PWG for use at member utilities.

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## 1.0 INTRODUCTION

A plant's licensing basis addresses automatic and manual mitigating actions for accident mitigation. Such actions may be in response to a fire event, station blackout, steam generator tube rupture (SGTR) or other event in the licensing basis. In some cases credit is taken in the plant licensing basis for manual actions that are performed within a specified time; these actions may be described as time critical actions (TCAs).

PWG members recognized that a strong, comprehensive TCA program can ensure that all TCAs are known, tracked and that plant procedures and training assure the ability to satisfactorily perform all TCAs. The PWG noted that plant specific TCA programs and procedures differed greatly in quality and content from one plant to another, and recognized that creating a TCA standard would improve the quality and increase consistency in the TCA programs across member utilities. To that end, PA-OSC-0304 was created and approved to create an operator TCA standard for use by PWROG member utilities.

This report is the deliverable for PA-OSC-0304 and includes the approved Operator Time Critical Action Program Standard and a summary of comment resolution for all PWG member comments that were received during development of this standard.

## **2.0 OBJECTIVE OF PWROG PROGRAM**

The objective of this program was to benchmark existing TCA programs and procedures within the PWROG member utilities, determine which features create a comprehensive TCA program and develop a standard for use by the PWROG member utilities.

### **3.0 METHOD OF GATHERING DATA**

The first task of the TCA program was to collect information by asking PWG members to provide copies of their plant-specific TCA programs and procedures.

Eleven plants responded to the request for plant-specific TCA programs and procedures, providing a total of 17 procedures and programs. Of these 17 documents, 11 were provided by Westinghouse design plants, 4 by B&W design plants, 1 fleet procedure that applies to both B&W and Westinghouse design plants, and 1 fleet procedure that applies to both CE and Westinghouse plant designs. Additional information was provided by open discussion in the Core Group conference calls, which included station personnel representing all three plant designs.

## **4.0 METHOD OF ANALYZING DATA**

The 17 procedures provided by PWG members were broken down by topics such as:

- Purpose
- Scope
- References
- Responsibilities
- Definitions
- TCA Criteria
- TCA Guidelines
- When TCA validation is required
- Evaluating procedure change impact
- Validation objectives, validation methods
- Simulator validation aspects
- In-plant validation aspects
- Exceeding time limit
- Inability to meet required time
- Required documentation
- Work on TCA equipment
- Identification and monitoring of TCA equipment
- Training

Based on a review of the procedure provided, topic areas and specific guidance items were identified that help create a strong, comprehensive program that identifies, tracks and validates TCAs in the plant licensing basis.

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## **5.0 CREATION OF OPERATOR TIME CRITICAL ACTION PROGRAM STANDARD**

The Operator Time Critical Action Program Standard initial draft was developed by incorporating the features that provide a strong TCA program that clearly identifies, controls and verifies the ability of the plant to ensure the TCAs can be performed as required.

At the August 2006 PWG meeting a short presentation was given to update the PWG on the status of the development of the standard. This meeting also included identifying a core group of volunteers to resolve all member comments. The initial draft was then sent to the entire PWG with a request for final comments in the September 15, 2006 transmittal letter OG-06-293, titled Transmittal of Draft Report “Control of Time Critical Actions Program” (PA-OSC-0304).

Eight members responded to the initial draft with a total of 91 comments. A portion of those comments was simple editorial comments which were readily resolved. A series of conference calls with members of the volunteer core group were then held to resolve the remaining comments. After all 91 comments were resolved, the draft standard was then prepared for the February 2007 PWG meeting. Prior to the February 2007 PWG meeting an additional five comments were received and resolved, after which the final draft was provided to the PWG for final review prior to the PWG meeting. At the PWG meeting an additional seven comments were discussed and then resolved, resulting in Revision 0 of the standard.

Operator Time Critical Action Program Standard, Revision 0 is presented in Appendix A.

All reviewer comments, including comment resolutions, are presented in Appendix B.

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## **APPENDIX A**

### **Operator Time Critical Action Program Standard**



# **Operator Time Critical Action Program Standard**

**Revision 0**

**March 30, 2007**

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Typically, the majority of time critical actions are performed by plant operations group personnel, with relatively few time critical actions performed by other plant personnel. Therefore, this standard is written with plant operations as the focus. Plants that assign time critical actions to other work groups should account for this difference when evaluating this standard.

## **1.0 PURPOSE**

The Time Critical Action (TCA) program should include the following elements in the statement of purpose:

- This program provides a means to ensure that the TCAs within scope as defined in Section 5.0, TCA Sources, can be accomplished by plant personnel.
- This program provides a means to document periodic validation of credited action times.
- This program provides a means to ensure that changes to the plant or to procedures or protocols do not invalidate credited action times.
- Security related TCAs are assumed to be safeguards information under the control of the plant security program, which already identifies, tracks and validates these actions. Therefore, security related TCAs are specifically excluded from the TCA program.
- Plants may elect to include time sensitive actions that are not credited in the plant licensing basis. While such actions are not Time Critical Actions (TCAs) as defined in section 4.0, Definitions, a plant may choose to include them in the TCA program. If this provision is exercised then the program shall clearly separate TCAs from time sensitive actions.

## **2.0 SCOPE**

This standard is a voluntary consensus standard and applies only to those plants that formally invoke it. This standard is designed and intended to be implemented in its entirety.

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### 3.0 REFERENCES

The TCA program should include the following references:

- NRC Information Notice 97-78, Crediting of Operator Actions In Place Of Automatic Actions and Modification of Operator Actions, Including Response Times. (This reference discusses two issues, 1) inappropriately crediting operator actions in place of automatic actions, and 2) altering operator actions, including response times, previously described in the plant licensing basis.)
- ANSI/ANS-58.8, Time Response Design Criteria for Nuclear Safety Related Operator Actions. (This reference discusses criteria used to determine whether safety-related systems can be initiated by operator action or require automatic action. If the scope of the SAR is expanded, this standard should be applied to new DBEs which require safety-related operator actions.)
- WCAP-14996, ERG Operator Response Time Assessment Program Final Report.
- Plant specific references.

### 4.0 DEFINITIONS

The TCA program should include a definition of the following terms:

- Time Critical Action: A manual action or series of actions that must be completed within a specified time to meet the plant licensing basis. A change in the required completion time is considered to be a change to the TCA.
- Validation: Performance of a Time Critical Action on the simulator or by in-plant walkthrough, or both, to ensure the action can be performed within the required time using the applicable procedures, including all required human performance protocols. To the extent possible, the validation will include all assumptions used in the analyses for the action being validated.
- Simulator Validation: Execution of procedures using the plant-specific simulator during a simulated event.
- Walkthrough Validation: A step-by-step in-plant walkthrough of procedures by plant personnel, simulating manipulation of controls and equipment.
- Minimum Shift Staffing: The minimum number of personnel required per shift, typically defined in the plant administrative procedures.

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## 5.0 TCA SOURCES

The TCA program should list all sources of plant-specific TCAs. Sources of TCAs vary between plants, and typically include one or more of the following:

- Final Safety Analysis Report (FSAR)
- Technical Specifications
- Station Blackout Analysis
- Licensing Commitments
- Fire Events
- Other plant-specific licensing basis reference sources, as applicable

All TCAs required to mitigate a design basis accident are required to be fully included within the plant specific scope. Other TCAs may be exempted from periodic validation and other program elements if the following is performed and documented by a cross discipline review panel (Operations, Engineering, PRA, etc):

- The TCA is determined to be of low risk significance, or
- The margin between the expected performance time and required performance time is large (e.g. more than 200%)

Equipment used to meet the exempted TCA may still need to be verified on a periodic basis to be capable of meeting its credited TCA function.

## 6.0 RESPONSIBILITIES

The TCA program should identify responsibilities for various plant work groups. Due to individual plant organization and needs, these responsibilities may be assigned to different work groups than those listed below. Typical responsibilities include:

- Plant Operations Group
  - Maintain a list of TCAs, and update as TCAs are added, deleted or modified.
  - Ensure minimum shift staffing is sufficient to ensure that TCAs can be performed within the required times.
  - Review changes to procedures, communication standards, procedure usage protocols, and other human performance protocols to determine impact on ability to meet TCAs.
  - Verify and document Operations ability to meet TCAs.
  - Verify accessibility of equipment, tools, keys, flashlights and other devices and supplies required for TCAs on a periodic basis. The frequency of this verification should be selected to ensure the availability of the required equipment, tools, keys, flashlights and other devices and supplies, and may vary, depending on administrative controls such as locked or sealed storage containers that reduce the likelihood of unavailability.

- 
- Verify that locally operated equipment, tools, keys, flashlights or other devices can accomplish the required function on a periodic basis. This verification should include the following, with justification documented for each item that cannot be verified.
    - Time the operation of locally operated valves while placing in the position required by the TCA, under system conditions similar to those conditions expected to be present during an actual event. If system conditions similar to those expected during the event cannot be obtained for testing (such as temperature or differential pressure), the plant should provide justification that the testing will still confirm operator capability to perform the function (open/close valve) during event conditions.
    - Verify that required tools perform the intended function by actual operation.
    - Verify that required keys lock, unlock, open, close or otherwise manipulate the corresponding device by actual operation.
    - Verify required flashlights work and batteries contain sufficient charge.
    - Verify required ladders or other devices are in the proper storage location, are in acceptable condition for use and can satisfy the requirements of the TCA.

**NOTE: For the purposes of this standard, the Plant Engineering Group includes such functions as System Engineering, Design Engineering, Nuclear Engineering, PRA, Licensing, Safety Analysis, etc.**

- Plant Engineering Group
  - Identify TCAs, using ANSI/ANS-58.8-1994 as reference.
  - Review changes to design documentation for potential impacts on TCAs.
  - Review plant modifications for potential impact on TCAs.
  - Inform Operations Group, Plant Procedures Group and other affected groups of additions, deletions or changes to TCAs.
  - Ensure adequate protection from environmental conditions caused by the initiating event for the time and route required for ingress, TCA performance and egress.
  - Ensure adequate lighting for the route required for ingress, TCA performance and egress.
  - Inform the Plant Operations and Plant Procedures groups of any equipment, tools, keys, flashlights or other devices or supplies required for performing the TCA.
- Plant Training Group
  - Ensure operators and other applicable personnel are trained on the TCAs that are selected for training using the Systematic Approach to Training (SAT) process.
  - Ensure TCAs are incorporated into the following programs:
    - Non-licensed operator initial training
    - Initial license training
    - Operator requalification training
    - Training programs for any other work group responsible for performing TCAs
  - Develop and maintain simulator or walk-through scenarios, including pass/fail criteria for each TCA that is selected for training on the simulator using the SAT process.
  - Develop job performance measures (JPMs), including pass/fail criteria, for each TCA that is selected for in-plant walkthrough training using the SAT process.
  - Incorporate known equipment operating times, including valve stroke times, into scenarios and JPMs.
  - Support simulator validation of TCAs when required by Plant Operations Group or Plant Procedures Group.
  - Assist or perform periodic validation of TCAs as directed in Section 8.0, TCA Validation.

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**NOTE: For the purposes of this standard, the Plant Procedures Group means those personnel responsible for maintaining plant procedures, regardless of whether this function is contained within a central procedure group, or is distributed among multiple plant groups.**

- Plant Procedures Group
  - Ensure those actions credited in plant licensing basis remain in plant procedures.
  - Consider the impact on related TCAs when changing or revising procedures.
  - Require TCA validation if any TCA may be adversely impacted by a procedure change.
  - Ensure the impact of procedure changes or revisions are reviewed by the appropriate work group(s) for new or existing TCAs.
  - Inform the Plant Operations Group of changes or revisions that create new TCAs.
- Plant Radiation Protection Group
  - Inform Operations of Radiation Protection measures that impact areas requiring access during performance of TCAs.
  - Establish contingency plans when areas requiring access during the performance of TCAs require increased radiological controls. These contingency plans shall ensure access to support TCA time requirements.

**NOTE: For the purposes of this standard, the Plant Work Control Group is the group that authorizes work activities, establishes isolated work areas, performs equipment tagging, etc. The group is variously referred to as the Work Control Center, Work Execution Center, Work Coordination Center, Integrated Work Management, etc.**

- Plant Work Control Group
  - Ensure work activities on or near plant equipment needed for performance of TCAs do not block access, impair needed area lighting, or otherwise adversely impact the performance of TCAs. Examples of such activities include, but are not limited to:
    - Scaffold construction
    - Asbestos abatement
    - Radiography
    - Equipment staging
    - Lead blanket installation
    - Activities affecting stroke time for valves used to satisfy a TCA
  - Ensure work activities on TCA related valves or other locally operated equipment or devices do not adversely impact the ability of the valves or other locally operated equipment or device to perform its TCA function. This may include verification of free movement, engineering evaluation or other suitable justification.
- Plant Security Group
  - Establish contingency plans when doors requiring access during the performance of TCAs are required to be secured. These contingency plans shall ensure access to support TCA time requirements.
  - Inform Operations of security measures that impact areas requiring access during performance of TCAs.
- Other plant-specific groups responsible for TCAs
  - Ensure group is adequately staffed with qualified personnel to ensure TCAs can be completed within the required times.

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## 7.0 TCA GENERAL REQUIREMENTS

The TCA program should include the following items:

- TCA analysis should include evaluation of the adequacy of the information available to the performer, the location of the devices to be manipulated and the time available for the performer to complete the action.
- The minimum complement of plant personnel should be maintained such that TCAs can be completed within the required times specified in the applicable analyses.
- Locations outside the control room, including ingress and egress routes, that are required for access for performance of TCAs, shall adequately protect personnel from the environmental and radiological conditions caused by the event, or the application of personal protective equipment shall be included in the TCA.
- Adequate lighting and communications methods shall be available for locations outside the control room, including ingress and egress routes, which are required for access for performance of TCAs.
- Records of actual operating time for plant equipment used to satisfy a TCA, including valve stroke times for remotely and locally operated valves, should be maintained. Where it is not possible to obtain a stroke time for the specific valve to be operated, the justification for not stroke-timing should be documented, and a known stroke time for a similar valve may be used. Actual stroking of the valves credited in the analysis is strongly preferred to identify difficulties with valves. The exception to use a similar valve should only be applied in unusual situations.

## 8.0 TCA VALIDATION

The TCA program should include the following TCA validation attributes:

### 8.1 Validation Methods

- TCAs that have required completion times such that simulator scenario or in-plant walkthrough validation is feasible should be validated on the simulator or by walkthrough.
- TCAs that have required completion times such that simulator or walkthrough validation is not feasible should be validated using alternate means. This should include a combination of simulator validation for such portions (if any) for which the simulator is useful, in-plant walkthrough for applicable portions (if any), and reasonable engineering judgment to waive those portions that are not satisfied by simulator or in-plant walkthrough. The basis for waiving all or a portion of a TCA validation should be documented in the plant TCA program. This provision should not be used as a routine validation convenience in lieu of other alternatives that appropriately validate TCA completion times.
- Applicable training records such as simulator scenarios, JPM performance, etc. may be used to document periodic validation of TCA completion times, provided that such validation is consistent with the TCA validation section of this standard.



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## 8.2 Reasons for Validating TCAs

- TCAs should be validated (or revalidated) by an appropriate means. Conditions that could prompt validation or revalidation of one or more TCAs include, but may not be limited to:
  - Procedure change in progress
  - Engineering request due to plant modification, design change, revised analyses, PRA results, etc.
  - Change or proposed change in plant protocol such as human performance procedures or standards
  - Periodic validation at a frequency that ensures the continued ability to meet TCAs, not to exceed 5 years<sup>1</sup>. This includes verifying the ability of locally operated equipment, tools, keys, flashlights or other devices or supplies to perform their required TCA function. Periodic validation is a valuable tool for detecting an unexpected challenge to TCA completion time, which may occur due to the aggregate of procedure and protocol changes and equipment modifications over time.
  - Operations management request
  - Degrading trend in TCA completion times

## 8.3 Validation Objectives

- Ensure the times are met as specified in the plant licensing basis.
- Demonstrate that the language, level of information, sequencing and number of tasks in the procedure is compatible with the minimum staffing, qualification, training and experience of plant personnel.
- Verify lighting, component labeling, accessibility of equipment, tools, keys, flashlights and other devices or supplies are adequate for successful completion of the TCA.

## 8.4 Validation Aspects

1. Validation should include those personnel necessary to evaluate and perform the TCA. The team should include a combination of the following, appropriate to the TCA validation being performed:
  - Team leader - The validation team leader possesses a level of knowledge commensurate with the task being validated, including the relation of the task to the TCA requirements.
  - TCA performer(s) – The TCA performers include only the minimum staffing required by the TCA analysis. The qualifications of the performers should be typical of the level of experience and training of personnel expected to perform the actions during an actual event.
  - Optional personnel – Depending on the reason for validation (procedure changes, plant modifications, etc.), or the need for additional expertise, other personnel representing Training, Engineering, PRA, Plant Procedures group or other groups of interest may be desired for observing or validating the TCA.

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<sup>1</sup> There is no regulatory basis for the 5-year time limit. This is considered to be a reasonable time limit to detect an unexpected challenge to the TCA completion time, while avoiding an undue burden on plant staff.

- 
2. Training support – training personnel, with input from other groups as needed, develop simulator scenarios, JPM scenarios or other appropriate evaluation methods consistent with the TCAs, including initial conditions, assumed equipment or system availability or failures, and other conditions associated with the TCA, to the extent possible.
  3. Simulator validation is the most effective method for testing control room procedures to ensure the assumed timelines can be accomplished.
  4. In-plant walkthrough validation is the most effective method for local actions required for a TCA, or when simulator modeling constraints prevent effective validation using the simulator.
  5. A combination of simulator and in-plant walkthrough validation is most effective for timelines which include actions both in the Control Room and in the plant.
  6. Special equipment, tools, keys, flashlights or other devices or supplies that are required to support the TCA are readily available.
  7. Validation of new or revised TCAs should include a briefing of the validation team by the team leader. This briefing includes:
    - The purpose of the validation
    - Discussion of the TCA
    - Content and purpose of revised actions or time requirements
    - Performer responsibilities
    - Evaluator responsibilities – Evaluators record required information but do not interfere with, distract or inappropriately prompt the performers during execution of the TCA.
  8. Periodic or unannounced validations of TCAs are performed without briefing the performers on the specifics of the TCA. This restriction is intended to avoid coaching or preconditioning of the TCA performers, and is not meant to exclude other plant-required aspects of pre-job briefs such as safety, ALARA, protected equipment, etc.
  9. The TCA validation documentation includes:
    - Date validation performed
    - List of validation team members
    - TCA to be validated
    - Simulator scenario number, or JPM number, as appropriate
    - Initial conditions
    - Malfunctions
    - Procedures used by the performers
    - Additional TCA information or guidance as necessary
    - Required completion time
    - Actual completion time
    - Resolution of discrepancies
  10. Validation of new or revised TCAs should receive a sufficient number of performances, typically by three (3) different performers (or crews), in order to provide reasonable assurance that the TCA can be completed within the required time.

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## 8.5 Validation Performance

1. Validation on simulator:
  - Performers take their positions in the simulator control room.
  - Briefing is performed on initial conditions and team member responsibilities, including recording of time data.
  - Evaluation team is positioned so as not to interfere with or distract performers or inhibit traffic paths.
  - Copies of applicable procedures and related support documents are available for use consistent with availability in the actual control room.
  - The simulated event is executed according to the predetermined scenario.
  - For periodic or unannounced validation, the scenario should continue until the TCA is completed. If the time requirement has been exceeded, the scenario should be continued to aid in determining required changes to accomplish the TCA within the required time. The team leader determines when there is no benefit to continuing the scenario.
2. Validation by walkthrough:
  - If the performer must obtain a procedure to perform the TCA, the working copy of the procedure should be prestaged at the location where the performer would be expected to obtain it.
  - Performers begin validation at a location where the performer may reasonably be expected to be, based on the event in progress.
  - Evaluation team members are stationed at locations appropriate for the TCA.
  - The team leader will instruct the performer to perform the procedure or sections of the procedure, consistent with the method of notification expected during an actual event.
  - Performers simulate the actions required by the applicable procedures:
    - Obtain required equipment such as keys, ladders, spoolpieces, etc, and place where required by the procedure.
    - Locate the designated equipment.
    - Simulate using the equipment.
    - Locate and read required instrumentation.
    - Simulate communications necessary to perform the TCA.
3. Equipment operating times:
  - Actual operating time for plant equipment should be used, where available, including valve stroke times for remote and locally operated valves.
  - Where it is not possible to obtain a stroke time for the specific valve to be operated or for a similar valve, an appropriate estimate of stroke time may be used.
4. Ingress/egress routes:
  - Pre-determined routes are used to ensure adequate protection from environmental conditions caused by the initiating event for the time and route required for ingress, TCA performance and egress.
5. Time keeping:
  - Designated team members record scenario start time, completion of tasks important to the TCA, and time of completion of the TCA.

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6. Human performance protocols:

- TCA validation includes the use of all current plant human performance protocols and standards for the tasks and procedures being performed. These include but may not be limited to:
  - Communications standard
  - Procedure use and adherence standard
  - Briefing requirements
  - Placekeeping requirements
  - Verification techniques such as self checking, peer checking, independent verification, concurrent verification
  - Personal Protection Equipment requirements
  - Other plant-specific human performance protocols

### 8.6 Evaluation of TCA Validation

- A completion time within 80% of the TCA required time is considered adequate assurance that the TCA can be reliably performed<sup>2</sup>.
- If the TCA is completed within 80%-100% of the required time, then the plant should perform the following:
  - Consider additional validations of the TCA using other performers.
  - Evaluate for a degrading trend in TCA completion time.
- If (during the performance of periodic or unannounced validation) a single shift crew (or individual) fails to meet the required time, then the plant should perform the following:
  - Remediation and retesting of the crew (or individual) in accordance with the plant training program.
  - Consider performing additional validations of the TCA using other performers.
  - Evaluate for a degrading trend in TCA completion time.
- If (during the performance of periodic or unannounced validation) more than one shift crew (or individual) fails to meet the required time, the plant should evaluate the ability to meet the plant licensing basis associated with the TCA. In addition, the plant should consider whether actions may be taken to improve the TCA response time. Refer to Attachment 1 for options for improving the TCA response time.

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<sup>2</sup> There is no regulatory basis for the criterion of 80% of the TCA required time discussed in this section. This criterion is based on expert opinion and is considered to be appropriate for identifying TCAs with little margin to the required completion time, as well as for identifying degrading trends in TCA completion time.

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## 9.0 DOCUMENTATION

The TCA program should include the following provisions for documentation:

- A list of all TCAs should be maintained. This list should contain the following as a minimum:
  - TCA Source document
  - Required action
  - Required time limits
  - Validation method (simulator, walkthrough or combination)
  - Basis for waiving validation, if applicable
  - Procedure that performs the required TCA
- The periodic inventory of equipment, tools, keys, flashlights and other devices and supplies required to accomplish TCAs should be retained in plant records.
- A record of cross-discipline review for those TCAs that are determined to be exempted from periodic validation or other program elements as permitted in Section 5.0, TCA Sources.
- A record of time validation (or waiver) for each TCA should be maintained in plant records.
- A record of TCA equipment operating times, including valve stroke times for remotely or locally operated valves, should be maintained and updated as necessary.

### **Attachment 1: Options to Improve Response Time**

Options for improving response times include, but may not be limited to:

- Modifying human performance protocol requirements. For example, excessive communications, briefings, or other requirements extend the time required to perform a procedure.
- Reducing level of detail in procedure steps. For example, if instrument identification number and control board locations are listed in the procedures for commonly used instruments, it will take longer to read and perform each step than if the commonly used instrument numbers and/or the associated control board locations are not written in the procedure.
- Changing step sequence such that more important actions are performed earlier in the procedure.
- Modifying procedure usage to increase the use of procedure handoffs, attachments, enclosures, etc.
- Modifying equipment such that fewer manual or local actions are required.
- Reanalyzing the TCA in order to modify the TCA required time such that the performer can achieve the required completion time using existing plant procedures and protocols.
- Obtaining an amendment to the plant licensing basis.

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## **APPENDIX B**

### **Review Comments on Operator Time Critical Action Program Standard Drafts**

Comment No.	Comment	Response
1	<p>Does a utility have to have to prove they can meet the times using the Normal shift manning, Minimum shift manning, Minimum T/S manning, etc.</p> <p>This issue is giving us a bit of trouble and I assume it will come up sooner or later at other plants.</p> <p>Normal manning: 3 ROs and 3 SROs (This is what is normally scheduled for any given day)</p> <p>Minimum T/S Staff: 2 ROs and 2 SROs (This from the T/Ss for who has to be on site)</p> <p>Minimum T/S CR: 1 RO and 1 SRO (This is the true minimum that can legally be in the CR)</p> <p>Also see comment # 20, 69, 80</p>	<p>11-15-06 conf call determined that, with respect to TCAs, the minimum shift staffing should be consistent with the assumptions or requirements of the TCA. Draft 3 of the standard includes changes to Section 6.0 (Operations Group Responsibilities) and to Section 7.0 to resolve this comment.</p> <p>Draft 4 of the standard added a definition of Minimum Shift Staffing, as used in the standard.</p>
2	<p>For verifying availability of equipment required for time critical actions, we have a monthly surveillance to inventory all staged emergency equipment which works pretty good.</p> <p>Also see comment # 13, 46, 57, 66, 78</p>	<p>11-15-06 conf call determined that each plant should select their own verification frequency, since administrative controls such as locked or sealed containers may reduce the likelihood that a required tool would be unavailable.</p> <p>Draft 3 of the standard includes this change.</p>



Comment No.	Comment	Response
3	<p>In regards to TCA validation you addressed in section 8.1, we currently validate every 2 years or if something changes that could affect the time. As far as the long time periods like 72 hours, I don't see a good way to accurately validate these times so I would like to see some sort of exemption for them.</p> <p>Also see comment # 25, 39, 51, 61, 70, 82, 83</p>	<p>11-15-06 conf call determined that a 5-year frequency would be sufficient to detect unexpected or unanticipated challenges to TCA required times. This could be due to a combination of procedure, equipment and protocol changes that may not have been recognized as affecting the TCA during development of the change. In addition, the rate of operator turnover (and replacement with newly licensed operators) was considered as a factor. Therefore, periodic validation of the TCAs is a valuable tool that should remain part of the standard.</p> <p>The issue of validating long term actions was resolved by adding a new Section 8.1 that discusses validation methods for short or long TCA completion times.</p> <p>Draft 3 of the standard includes these changes.</p> <p>The conf call also addressed taking credit for ongoing training.</p> <p>Draft 3A of the standard includes this change.</p>

Comment No.	Comment	Response
4	<p>In section 8.3, you state the Validation team leader should possess an SRO level of knowledge. That's Ok, but I think there are several of us who are going to be in charge of the program that do not, or have not held an SRO license. Maybe it would be better to state the team leader should possess a good knowledge of the TCA program and plant operations (or something similar).</p> <p>Also see comment # 27, 85</p>	<p>11-15-06 conf call determined that the team leader should possess “a level of knowledge commensurate with the task being validated, including the relation of the task to the TCA requirements.”</p> <p>Draft 3 of the standard includes these changes.</p>
5	<p>When we perform the timed simulator scenarios it is usually just the booth operator and an instructor or the booth operator and me performing the timing. We don't have a team to do it. It is hard to find people available for a team to watch and time TCA on the simulator or inplant walk downs. I think the team concept is good, but in reality it may be difficult to implement.</p>	<p>In Draft 3A, Section 8.4 was revised to address this comment.</p>
6	<p>In the Purpose section, delete the second bullet “This program provides a means to document periodic validation of credited action times.”</p> <p>The only reason to do periodic validation is to ensure that other influences have not invalidated the credited action times. This is already covered in the next bullet.</p>	<p>11-30-06 conf call determined that documenting periodic validation is an important aspect of the TCA program. No change required.</p>
7	<p>In the Purpose section, delete the word future in the last bullet.</p>	<p>Changed per comment.</p> <p>Draft 2 implemented this change.</p>
8	<p>In the Definitions section, delete the word “Operator” in the second bullet</p>	<p>11-30-06 conf call changed per comment.</p> <p>Draft 4 of the standard implemented this change.</p>
9	<p>In the Definitions section second bullet, change “includes” to “will include”.</p>	<p>Changed per comment.</p> <p>Draft 2 implemented this change.</p>

Comment No.	Comment	Response
10	In the Definitions section third bullet, delete the word "Actual".	Changed per comment.  Draft 2 implemented this change.
11	<p>Definitions section last bullet. I want to debate the 20%. It should be focused on margin. If an increase of 10% puts me on the limit, I never made it to a degrading trend.</p> <p>Also see comment # 44, 64</p> <p>(PGS: Being able to identify a degrading trend is one of the objectives of the PA, so we need to have criteria to identify it. If we assume that each TCA has been (or will be) validated to establish a baseline time, then the difference, or margin, between the baseline time and the required time will be known. Maybe the criterion for degrading trend could be a specific reduction in that margin, maybe 50 %. If so, then comment # 72 should be reviewed as part of the change.)</p>	<p>11-30-06 conf call deleted this bullet from the definitions section and revised Section 8.6 to refer to 80% of the required time, effectively establishing a margin of 20% as criteria for evaluating whether a degrading trend has occurred. Eliminated reference to "baseline" times and focused on margin to required time.</p> <p>Draft 4 of the standard implemented this change.</p>
12	<p>In the TCA sources section, delete the item regarding an increase in CDF of 1E-6. Let the PRA program decide this.</p> <p>Also see comment # 56</p>	<p>Deleted specific PRA criteria following lengthy discussion with a station PRA engineer.</p> <p>Draft 3A of the standard includes this change.</p>
13	<p>Plant Operations Group responsibilities, verification of accessibility of equipment, tools, etc. Leave it as written, just specifying periodic basis. We are performing it semi-annually.</p> <p>Also see comment # 2, 46, 57, 66, 78</p>	<p>11-15-06 conf call determined that each plant should select their own verification frequency, since administrative controls such as locked or sealed containers may reduce the likelihood that a required tool would be unavailable.</p> <p>Draft 3 of the standard includes this change.</p>
14	Plant Engineering Group responsibilities 4 <sup>th</sup> bullet. Delete "Plant Procedures Group and other affected groups (if any)".	11-30-06 conf call determined no change required.

Comment No.	Comment	Response
15	Plant Engineering Group responsibilities 7 <sup>th</sup> bullet. Replace “Notify the” with “Inform” and delete “and Plant Procedures”	11-30-06 conf call changed to “inform”, but did not delete reference to plant procedures group.  Draft 4 of the standard implemented this change.
16	Plant Engineering Group responsibilities last bullet. Change to read “Inform Plant Operations Group of...”	Changed per comment.  Draft 2 implemented this change.
17	Plant Training Group responsibilities 4 <sup>th</sup> bullet. I believe we will get kickback from training that JPMs are developed by their own criteria. NOT these. Of particular note is that JPMs are evaluating an individual. This program should take credit for the crew and any interactions that would take place within the crew.  Also see comment #28	11-30-06 conf call determined that a TCA would meet training dept criteria for a JPM. No changes required.
18	Plant Training Group responsibilities. Delete 6 <sup>th</sup> bullet regarding supporting simulator validation of TCAs.	11-30-06 conf call determined that supporting simulator validation of TCAs is a valid training group responsibility. No change required.
19	Plant Procedures Group Responsibilities. Add new bullets for: <ul style="list-style-type: none"> <li>•Ensure the impact of procedure changes or revisions are reviewed by the appropriate work group(s) for new or existing TCAs.</li> <li>•Inform the Plant Operations Group of changes or revisions that create new TCAs.</li> </ul>	Changed per comment.  Draft 2 implemented this change.
20	TCA General Requirements second bullet. Change to “TCAs for any design basis event must be readily performed by the minimum complement of station personnel that are required by the analyses.”  Also see comment # 1, 69, 80	Resolved when comment 1 was addressed.

Comment No.	Comment	Response
21	TCA General Requirements 3 <sup>rd</sup> bullet. Add “, or the application of personnel protective equipment shall be included in the TCA” at end of sentence.	Changed per comment.  Draft 2 implemented this change.
22	TCA General Requirements last bullet. <ul style="list-style-type: none"> <li>•Delete “records of”</li> <li>•Replace “maintained” with “included in the TCA”</li> </ul> Also see comment # 91	11-30-06 conf call changed per comment.  Draft 4 of the standard implemented this change.
23	Reasons for validating TCAs first bullet. Delete the word “applicable”.	Changed per comment.  Draft 2 implemented this change.
24	Reasons for validating TCAs first bullet, second dash. Add “that result in degraded times” at end of sentence.	11-30-06 conf call determined no change required.

Comment No.	Comment	Response
25	<p>Reasons for validating TCAs first bullet, 4<sup>th</sup> dash.</p> <p>I don't like 2 years for everything. 2 years for risk significant activities might be acceptable. 5 Years for others. The other item is that we have segregated out Appendix R actions to those that are performed in the first two hours into an event. Other items that are performed after the first two hours are generally accepted as being capable of being performed in a timely fashion. Long term actions such as the 72 hour to cold shutdown usually contain calculations etc. which really take out the human action time from the equation. They should not be listed as a Time Critical Action in the first place.</p> <p>Also see comment # 3, 39, 51, 61, 70, 82, 83</p>	<p>11-15-06 conf call determined that a 5-year frequency would be sufficient to detect unexpected or unanticipated challenges to TCA required times. This could be due to a combination of procedure, equipment and protocol changes that may not have been recognized as affecting the TCA during development of the change. In addition, the rate of operator turnover (and replacement with newly licensed operators) was considered as a factor. Therefore, periodic validation of the TCAs is a valuable tool that should remain part of the standard.</p> <p>The issue of validating long term actions was resolved by adding a new section 8.1 that discusses validation methods for short or long TCA completion times.</p> <p>Draft 3 of the standard includes these changes.</p> <p>The conf call also addressed taking credit for ongoing training.</p> <p>Draft 3A of the standard includes this change.</p>
26	<p>Validation Objectives section first bullet. Replace “for personnel action” with “as”.</p>	<p>Changed per comment.</p> <p>Draft 2 implemented this change.</p>


Comment No.	Comment	Response
27	<p>Validation Aspects step 1 first bullet. Replace “SRO” with “appropriate”.</p> <p>If the TCS is to start an instrument air compressor and a new compressor was installed, an individual with SRO knowledge is not needed to do the validation. An individual with SRO knowledge might be required to write the requirement for the time limitation. Once it is written, then it is the level of qualification for the equipment.</p> <p>Also see comment # 4, 85</p>	<p>11-15-06 conf call determined that the team leader should possess “a level of knowledge commensurate with the task being validated, including the relation of the task to the TCA requirements.”</p> <p>Draft 3 of the standard includes these changes.</p>
28	<p>Validation Aspects step 2.</p> <p>See comment # 17 regarding JPMs.</p>	<p>11-30-06 conf call addressed as part of resolution of comment 17.</p> <p>Draft 4 of the standard implemented this change.</p>
29	<p>Validation Aspects step 7. Delete the word “Initial”.</p>	<p>11-30-06 conf call changed per comment.</p> <p>Draft 4 of the standard implemented this change.</p>
30	<p>Validation Aspects step 8. Change to read “...without briefing the performers on the specifics of the TCA”. This is because a safety brief, etc will be held.</p> <p>Also see comment # 53, 87</p>	<p>11-30-06 conf call clarified this step. The intent is to avoid preconditioning the performer, not to exclude other pre-job brief topics, such as safety, ALARA, etc.</p> <p>Draft 4 of the standard implemented this change.</p>
31	<p>Validation Aspects step 10. Change to read “...should be performed multiple times by separate individuals, typically three...”</p>	<p>11-30-06 conf call changed to clarify the intent of the step.</p> <p>Draft 4 of the standard implemented this change.</p>

Comment No.	Comment	Response
32	<p>Validation Performance step 1, revise the last bullet to read:            “For periodic or unannounced validation, the scenario should continue until the TCA is completed. If the time requirement has been exceeded, the scenario should be continued to aid in determining required changes to accomplish the TCA within the required time. The team leader determines when there is no benefit to continuing the scenario.”</p> <p>Also see comment # 86</p>	<p>Changed per comment.</p> <p>Draft 2 implemented this change.</p>
33	<p>Evaluation of TCA validation section, 3<sup>rd</sup> bullet and 4<sup>th</sup> bullet. Change each bullet such that they begin with “If during the performance of periodic or unannounced validation, a single shift crew ...”</p>	<p>Changed per comment.</p> <p>Draft 2 implemented this change.</p>
34	<p>Use either “station” or “plant” consistently. Don’t switch from one to the other.</p>	<p>Changed to “plant” where appropriate. “Station Blackout” and “stationed” were left unchanged.</p>
35	<p>Options To Improve Response Time section. Add the following new bullet:</p> <ul style="list-style-type: none"> <li>• Obtain an amendment to the Licensee requirements.</li> </ul>	<p>Changed per comment.</p> <p>Draft 2 implemented this change.</p>
36	<p>Documentation section 4<sup>th</sup> bullet. Change to read:            “A record of time validation for each TCA should be maintained by the Plant Operations Group”.</p> <p>Also see comment # 73, 75, 76, 79</p>	<p>11-30-06 conf call determined that the standard should not attempt to establish the plant group that owns the TCA program, but instead to leave that up to each plant based on their needs. Revised the first paragraph under Section 6.0, Responsibilities to provide clarification on this flexibility.</p> <p>Draft 4 of the standard implemented this change.</p>



Comment No.	Comment	Response
37	<p>Our TCA policy is weak on defining the difference between Time Critical Task (challenging) Time Critical Task (informational). Our policy does not require time studies or verify that operators can meet TCA (informational) tasks. The existing Time Critical Task (Informational) is defined as time requirements being much longer than the expected performance times. This is a very subjective criterion, which should be better defined. We should be able to establish a threshold time of maybe two hours based on South Texas policy. Two hours may be a reasonable threshold because it exceeds simulator scenario time frames that could be supported by training department resources. A second criterion to consider is when the initiating event is sufficiently vague as to when the timing events would start (i.e., such as a dilution event at low power event). A third criterion could be when the timing scenario is complex in nature in which equipment response times and operator actions intertwined to make it impracticable to time the scenario (i.e., the design basis natural circulation cool-down time requirement to achieve RHR cut in within 9 hours).</p>	<p>During the 11-15-2006 conf call the issue of validating long term actions was resolved by adding a new Section 8.1 that discusses validation methods for short or long TCA completion times.</p> <p>Draft 3 of the standard includes these changes.</p>
38	<p>Our Time Critical Action policy requires mandatory initial time studies of all tasks listed in Figure 5.1. This requirement may not be necessary for tasks that already have an existing testing document as a Job Performance Measure with an acceptable testing result history. For these tasks, the policy should waiver the need to perform time studies for that particular task.</p>	<p>11-15-2006 conf call approved changes permitting taking credit for JPMs or other training documentation for validation.</p> <p>Draft 3 of the standard includes these changes.</p>

Comment No.	Comment	Response
39	<p>The policy at some utilities requires periodic performance of time studies at some frequency. This appears to be unnecessary, as long as the training department randomly tests operator response times for the designated time critical tasks. Time studies should be triggered by an event such a new task, degrading test results of a task, procedure changes adding detail to the operator response time flow paths, or design changes that has the potential to reduce operator response time margin.</p> <p>Also see comment # 3, 25, 51, 61, 70, 82, 83</p>	<p>11-15-06 conf call determined that a 5-year frequency would be sufficient to detect unexpected or unanticipated challenges to TCA required times. This could be due to a combination of procedure, equipment and protocol changes that may not have been recognized as affecting the TCA during development of the change. In addition, the rate of operator turnover (and replacement with newly licensed operators) was considered as a factor. Therefore, periodic validation of the TCAs is a valuable tool that should remain part of the standard.</p> <p>Draft 3 of the standard includes these changes.</p> <p>The conf call also addressed taking credit for ongoing training.</p> <p>Draft 3A of the standard includes this change.</p>

Comment No.	Comment	Response
40	<p>I am sitting here reading NUREG-1852, Demonstrating the Feasibility and Reliability of Operator Manual Actions in Response to Fire. This NUREG is out for comment, and although it may not specifically apply to EMG Time critical actions, I think you should take a look at it if you haven't already seen it. It contains some very detailed guidance some of which apply to all time critical actions.</p> <p> NUREG -1852.pdf</p> <p>(NOTE: The imbedded object above can be retrieved only from the Word version of this WCAP.)</p> <p>I am not sure we want to put all/any of the stuff contained in the NUREG in our procedure. I just thought it brought up some good points. We currently have some manual operator actions for fire areas outside the control room, and if we have to follow the new NUREG, I am sure we will not be able to meet the time requirements. This may force Engineering to re-engineer some of the actions, and do mods to fix some of them, but I don't think we can get rid of all of them. I can see someone in the NRC other than Fire Protection getting a hold of this NUREG at some point and trying to apply some of the stuff in it to EOP/OFN actions. I just wanted you to see this for info only. I am not suggesting that we incorporate any part of it into the new generic procedure unless it will benefit us in some way.</p> <p>(PGS: sections 3.2.10, 3.2.11, 4.2.10, 4.2.11 of the draft NUREG discuss staffing and demonstrating performance of the manual actions. These sections are particularly interesting with respect to the sections in the TCA draft standard that attempt to address similar issues.)</p>	<p>11-30-06 conf call reviewed discussed the draft NUREG content and status. The determination was made to not reference a draft NUREG, but instead to revisit this comment if the NUREG is issued before the TCA standard is finalized. As of 3-7-2007, this NUREG is still in draft status.</p>
41	<p>3. References</p> <p>The reference to WCAP-14996 would likely only be applicable to the Westinghouse plants.</p>	<p>12-14-06 conf call determined that aspects of the WCAP, particularly the information learned while timing various operating crews and the recommendations for improving response time, would be valuable to all PWR vendor types.</p>

Comment No.	Comment	Response
42	<p>4. Definitions</p> <p>TCA - as written, the time critical actions would have to be specified in the "plant licensing basis". There may be actions outside of plant licensing basis such as commitments to external groups like the EPA or others. I would add to plant licensing basis or other governing documents. In addition, please add to meet a design basis, licensing requirement, or other commitments.</p>	<p>12-14-06 conf call determined that TCA definition should be limited to plant licensing basis. It was also recognized that plants may have time related commitments that are not part of the plant licensing basis, and that it would be convenient for these to be tracked in the same program. To accommodate that capability, a new note will be added to Section 1.0 to address other time sensitive items.</p> <p>Draft 5 of the standard includes this change.</p>
43	<p>4. Definitions</p> <p>Validations - You may not be able to include all assumptions used in the analysis for the action being validated. For example the analysis could assume an adverse environment (radiation or temperature). You could talk about them in the validation, but could not duplicate the conditions. Recommend adding when possible to the last sentence.</p>	<p>12-14-06 conf call noted that the draft 4 definition of "Validation" resolves this comment via the use of the term "To the extent possible..."</p>
44	<p>4. Definitions</p> <p>Degrading trend - Some items will not have 20% margin. For example if you are allowed 100 minutes to complete an activity and your time goes from 95 to 105 minutes, the trend is not degrading but the outcome is not acceptable.</p> <p>Also see comment # 11, 64</p>	<p>11-30-06 conf call deleted this bullet from the definitions section and revised Section 8.6 to refer to 80% of the required time, effectively establishing a margin of 20% as criteria for evaluating whether a degrading trend has occurred. Eliminated reference to "baseline" times and focused on margin to required time.</p> <p>Draft 4 of the standard implemented this change.</p>

Comment No.	Comment	Response
45	<p>5. TCA Sources</p> <p>Do you want to add b.5.b? Or more generally security related actions?</p>	<p>12-14-06 conf call determined that security commitments, especially those related to B.5.b, already fall under the category of plant licensing basis. Therefore, there is no need to list them separately as a TCA source.</p> <p>During this discussion, it was determined that is not appropriate to include security actions in the TCA program since they are typically considered to be safeguards information controlled in accordance with the plant security program. Therefore, the Purpose section will be revised to specifically exclude security related actions.</p> <p>Draft 5 of the standard includes this change.</p>
46	<p>6. Responsibilities</p> <p>Your question on periodic verification. I would not specify the periodicity in this document. At Davis Besse, we accomplish the review on a monthly basis using our Monthly Activity Log. Also, I would not call this a surveillance. Surveillance implies a Technical Specification requirement.</p> <p>Also see comment # 2, 13, 57, 66, 78</p>	<p>11-15-06 conf call determined that each plant should select their own verification frequency, since administrative controls such as locked or sealed containers may reduce the likelihood that a required tool would be unavailable.</p> <p>The word “surveillance” is not used to describe this check.</p> <p>Draft 3 of the standard includes this change.</p>

Comment No.	Comment	Response
47	6. Responsibilities We disagree with specific labeling for time critical components. Most of the components are significant and well known. Adding additional labels just creates clutter. Recommend deleting.	12-14-06 conf call agreed that specific labeling for TCA components should not be directed by the standard.  Draft 5 of the standard includes this change.
48	6. Responsibilities Plant Procedures Group - We don't have such a group. Recommend generic wording - Individuals responsible for Plant Procedures-- instead.	11-30-06 conf call added a note to the Responsibilities section for the Plant Procedures Group to clarify that this means the station personnel responsible for maintaining procedures.  Draft 4 of the standard implemented this change.
49	6. Responsibilities Plant Maintenance Group - Recommend adding lead blankets to examples. Making a valve inaccessible that the operators must operate is a problem.	Changed per comment.  Draft 2 implemented this change.
50	7. TCA General Requirements Third bullet - add and radiological to environmental conditions.	Changed per comment.  Draft 2 implemented this change.

Comment No.	Comment	Response
51	<p>8. TCA Validation</p> <p>I would recommend the periodic validations be complete once per fuel cycle. Ideally, the review could be completed prior to restart. This would allow assessment of Modification as build impact on actual performance. This is not practical due to completion for resources prior to restart. I would soften this to just be a recommended periodicity not a hard fast requirement.</p> <p>Also see comment # 3, 25, 39, 61, 70, 82, 83</p>	<p>11-15-06 conf call determined that a 5-year frequency would be sufficient to detect unexpected or unanticipated challenges to TCA required times. This could be due to a combination of procedure, equipment and protocol changes that may not have been recognized as affecting the TCA during development of the change. In addition, the rate of operator turnover (and replacement with newly licensed operators) was considered as a factor. Therefore, periodic validation of the TCAs is a valuable tool that should remain part of the standard.</p> <p>The issue of validating long term actions was resolved by adding a new section 8.1 that discusses validation methods for short or long TCA completion times.</p> <p>Draft 3 of the standard includes these changes.</p> <p>The conf call also addressed taking credit for ongoing training.</p> <p>Draft 3A of the standard includes this change.</p>
52	8.3.1 Someone needs to be the time keeper.	<p>Added time-keeping to the Standard.</p> <p>Draft 2 implemented this change.</p>

Comment No.	Comment	Response
53	<p>8.3.8 Recommend deleting. People are not going to allow to go through the plant without some sort of briefing to address items like the 6 inch rule, you are not permitted to operate anything, access to protected train equipment etc. Some discussion of the validation process would be required at a minimum.</p> <p>Also see comment # 30, 87</p>	<p>11-30-06 conf call revised this as part of the resolution of comment 30. The intent is to avoid preconditioning the performer, not to exclude other pre-job brief topics, such as safety, ALARA, etc.</p> <p>Draft 4 of the standard implemented this change.</p>
54	<p>9.0 Options to improve response time</p> <p>Last bullet - recommend adding "Reanalyze the TCA to allow modification of the required time...most TCA will require some sort of reanalyzing prior to changing the times.</p> <p>Also see comment # 89</p>	<p>Changed per comment.</p> <p>Draft 2 implemented this change.</p>
55	<p>10.0 Documentation</p> <p>Recommend wording change to last item - Procedures that accomplish the required TCA.</p>	<p>12-14-06 conf call deleted this bullet.</p> <p>Draft 5 of the standard includes this change.</p>
56	<p>In section 4.0 first bullet you define what a TCA is. In section 5 you list PRA as a source. We may need to add to definition in section 4.0 "and PRA defined actions that cause an increase in CDF of 1E-6".</p> <p>Also see comment # 12</p>	<p>Deleted specific PRA criteria following lengthy discussion with a station PRA engineer.</p> <p>Draft 3A of the standard includes this change.</p>
57	<p>Section 6.0 you asked what frequency to verify equip, tools, etc. We do it quarterly. Perhaps use "at least quarterly".</p> <p>Also see comment # 2, 13, 46, 66, 78</p>	<p>11-15-06 conf call determined that each plant should select their own verification frequency, since administrative controls such as locked or sealed containers may reduce the likelihood that a required tool would be unavailable.</p> <p>Draft 3 of the standard includes this change.</p>



Comment No.	Comment	Response
58	Section 6.0 need bullet for operations to "Provide list of doors to security requiring access for TCAs."	12-14-06 conf call noted that operators already carry hard keys for accessing security doors, and that existing security group responsibilities adequately address security door access concerns. No changes necessary.
59	Can we provide exception for Plant Training (section 4.0) for TCAs that do not need to have simulator/JPM training and validation?	12-14-06 conf call noted that previous changes to Section 8.1 in draft 3A resolved this concern.
60	Last bullet in section 7.0; add for emphasis "Actual stroking of the valves credited in analysis is strongly preferred to identify difficulties with valves. The exception to use a similar valve should only be applied in unusual situations." (McGuire must stroke all valves we credit with time limit. We have found problems with valves that would not have been ID'd if we stroked some other similar valve.) Do we really need this exception?	<p>11-30-06 conf call determined that requiring plants to stroke all valves in the TCA program would be an undue burden. The standard was changed to encourage, but not require, plants to consider stroke times in the TCAs.</p> <p>Draft 4 of the standard implemented this change.</p>

Comment No.	Comment	Response
61	<p>Section 8.1 - I agree with 2 years. Some exception should be allowed for examples you give for times that are very long. These examples could be segmented into assumed times. For example, if we assume operators can restore power within 1 hour of having the switchyard energized, then validate that part.</p> <p>Also see comment # 3, 25, 39, 51, 70, 82, 83</p>	<p>11-15-06 conf call determined that a 5-year frequency would be sufficient to detect unexpected or unanticipated challenges to TCA required times. This could be due to a combination of procedure, equipment and protocol changes that may not have been recognized as affecting the TCA during development of the change. In addition, the rate of operator turnover (and replacement with newly licensed operators) was considered as a factor. Therefore, periodic validation of the TCAs is a valuable tool that should remain part of the standard.</p> <p>The issue of validating long term actions was resolved by adding a new Section 8.1 that discusses validation methods for short or long TCA completion times.</p> <p>Draft 3 of the standard includes these changes.</p> <p>The conf call also addressed taking credit for ongoing training.</p> <p>Draft 3A of the standard includes this change.</p>

Comment No.	Comment	Response
62	Section 8.3 - We get JPM times etc from training for our periodic validation. We don't use a validation team except for validating a new action. Section 8.3 does not match how we may do our periodic validation. We do our periodic validation by reviewing training documentation (JPMs, Active Simulator Exams (ASEs), etc) and running some validations for items we do not have training records for. If we validate a local action time, we don't always use a JPM or training rep.	12-14-06 conf call noted that previous changes to Section 8.1 in draft 3A resolved this concern.
63	Section 2.0 (Scope): Is this document only intended for PWRs or is it intended to be made an industry-wide standard?	<p>12-14-06 conf call noted the following:</p> <ul style="list-style-type: none"> <li>• The project authorization was written for, approved by, and funded by PWROG members only</li> <li>• No input has been asked from, or received by, the BWR community</li> <li>• There is no process for BWR review of this standard</li> </ul> <p>Therefore, there is no expectation or attempt to ask BWR plants to accept this standard. However, a PWROG member utility that also owns BWR plants might choose to evaluate the standard for inclusion at their plant.</p>

Comment No.	Comment	Response
64	<p>Section 4.0: Suggest modifying definition of degrading trend. There will obviously be some variation in the normal completion times between various operators and crews, which may exceed 20%.</p> <p>Also, in cases where there is a large amount of margin from the allowed time, an across-the-board increase in time is not necessarily significant.</p> <p>Possible alternative: Multiple operators (or crews) having increased TCA completion times which exceed the administrative limit. (Note: I would prefer to allow individual plants to establish administrative limits or "percent of allowed" criteria which indicates loss of margin. Alternatively, could specify 80% of allowed time).</p> <p>Also see comment # 11, 44</p>	<p>11-30-06 conf call deleted this bullet from the definitions section and revised Section 8.6 to refer to 80% of the required time, effectively establishing a margin of 20% as criteria for evaluating whether a degrading trend has occurred. Eliminated reference to "baseline" times and focused on margin to required time.</p> <p>Draft 4 of the standard implemented this change.</p>
65	<p>Section 6.0: Operations Group responsibilities should include evaluating staffing levels changes for impact on ability to complete TCAs for the most limiting credible event.</p>	<p>12-14-06 conf call noted that any change to staffing levels would include one or more procedure changes. The operations group responsibility for evaluating procedure changes for TCA impact will identify any proposed staffing level changes that affect ability to complete TCAs.</p> <p>No changes are necessary.</p>
66	<p>Section 6.0: Periodicity of checks on accessibility of equipment, tools, and other supplies should NOT be defined. Leave this to individual plants, since other administrative controls (such as training, sealed containers, etc) may reduce the risk of unavailability.</p> <p>Also see comment # 13, 46, 57, 78</p>	<p>11-15-06 conf call determined that each plant should select their own verification frequency, since administrative controls such as locked or sealed containers may reduce the likelihood that a required tool would be unavailable.</p> <p>Draft 3 of the standard includes this change.</p>

Comment No.	Comment	Response
67	Section 6.0: Suggest rewording the Procedures Group second item since, depending on the procedure being changed, ALL TCAs won't need to be evaluated. Suggest: "Consider the impact on related TCAs when changing or revising procedures."	<p>Changed per comment.</p> <p>Draft 2 implemented this change.</p>
68	Section 6.0: The responsibility for the Plant Maintenance Group (to ensure work activities don't impair TCAs) really seems like an Operations responsibility. The Maintenance Group can't be expected to be familiar with Operations TCAs.	<p>12-14-06 conf call concurred that this should not be a maintenance group responsibility. It was determined that this responsibility is more appropriately assigned to the plant group responsible for work control, since that group includes multiple disciplines, including operations.</p> <p>Draft 5 of the standard includes this change.</p>
69	<p>Section 7.0: The second bullet seems to be worded backwards, since the number of TCAs is normally driven by factors (such as the plant design and commitments) which are difficult to control. Suggest: "The minimum complement of station personnel should be maintained so that TCAs can be completed in the required time for the most limiting event(s).</p> <p>Also see comment # 1, 20, 80</p>	Resolved when comment 1 was addressed.

Comment No.	Comment	Response
70	<p>Section 8.1: Every 2 years for revalidation seems too stringent. Suggest leaving this undefined ("TCAs should be periodically revalidated as specified in plant-specific program documents to ensure the ability to meet TCAs is maintained") or change to five years.</p> <p>Also see comment # 3, 25, 39, 51, 61, 82, 83</p>	<p>11-15-06 conf call determined that a 5-year frequency would be sufficient to detect unexpected or unanticipated challenges to TCA required times. This could be due to a combination of procedure, equipment and protocol changes that may not have been recognized as affecting the TCA during development of the change. In addition, the rate of operator turnover (and replacement with newly licensed operators) was considered as a factor. Therefore, periodic validation of the TCAs is a valuable tool that should remain part of the standard.</p> <p>The issue of validating long term actions was resolved by adding a new Section 8.1 that discusses validation methods for short or long TCA completion times.</p> <p>Draft 3 of the standard includes these changes.</p> <p>The conf call also addressed taking credit for ongoing training.</p> <p>Draft 3A of the standard includes this change.</p>

Comment No.	Comment	Response
71	Section 8.3 and 8.4: This seems like unnecessary detail for a high level standard--redundant to the programmatic requirements for EOP/AOP validation.	12-14-06 conf call determined that the level of detail in the draft reaches the appropriate balance for ensuring that TCA validation is effective without being overly prescriptive. No changes necessary.
72	Section 8.5: The 75% criterion seems too rigid. I would prefer to leave this to individual plants to determine administrative limits to maintain sufficient margin to account for variations between crews and situational factors. Alternatively, change to 80%	11-30-06 conf call revised this as part of the resolution to comment 11.  Draft 4 of the standard implemented this change.
73	<p>Since I do not have any type of program or documentation of our TCAs, I am not sure what a good program should look like. We are having a problem identifying who the owner of the program should be. I believe that since these are design bases issues, then Engineering needs to own the program. Unfortunately, Engineering does not see it my way.</p> <p>Also see comment # 36, 75, 76, 79</p>	<p>11-30-06 conf call determined that the standard should not attempt to establish the plant group that owns the TCA program, but instead to leave that up to each plant based on their needs. Revised the first paragraph under Section 6.0, Responsibilities to provide clarification on this flexibility.</p> <p>Draft 4 of the standard implemented this change.</p>

Comment No.	Comment	Response
74	<p>Purpose, 1<sup>st</sup> bullet. What about PRA, Regulatory commitments, Appendix R. Could maybe just include a definition for licensing bases that includes all of this.</p>	<p>PRA was purposely deleted from this standard in Draft 3A following lengthy discussion with a station PRA engineer.</p> <p>12-14-06 conf call determined that TCA definition should be limited to “plant licensing basis”, since that term encompasses regulatory commitments and Appendix R commitments, among others. It was also recognized that plants may have time related commitments that are not part of the plant licensing basis, and that it would be convenient for these to be tracked in the same program. To accommodate that capability, a new note will be added to Section 1.0 to address other time sensitive items.</p> <p>Draft 5 of the standard includes this change.</p>



Comment No.	Comment	Response
75	<p>Responsibilities, 1<sup>st</sup> sentence.  This goes along with the next comment. Should this document specify or suggest who the owner of the program should be? Right now we are in a tennis match of sorts just trying to get someone to identify what our time critical actions are. Engineering wants no part of it, Ops is not smart enough to figure it out, and Training, even though they currently track all of the actions that we currently time, will not accept the program. Since this is licensing and/or design bases stuff, shouldn't it be an Engineering function? Not having any type of program, we are inventing the wheel here. Having a standard approach may help in getting some department admit that they own it. An industry standard kind of thing.</p> <p>Also see comment # 36, 73, 76, 79</p>	<p>11-30-06 conf call determined that the standard should not attempt to establish the plant group that owns the TCA program, but instead to leave that up to each plant based on their needs. Revised the first paragraph under Section 6.0, Responsibilities to provide clarification on this flexibility.</p> <p>With respect to the responsibility to identify all TCAs, the standard lists that as one of the Engineering Group functions. Note that individual plant needs may result in moving responsibilities to other groups.</p> <p>Draft 4 of the standard implemented this change.</p>
76	<p>Plant Operations Group responsibilities, 1<sup>st</sup> dash.  Engineering should be the owner of the TCA list. They are responsible for design and licensing bases. The TCA list should be a controlled document and handled in the same manner as any design information.</p> <p>Also see comment # 36, 73, 75, 79</p>	<p>11-30-06 conf call determined that the standard should not attempt to establish the plant group that owns the TCA program, but instead to leave that up to each plant based on their needs. Revised the first paragraph under Section 6.0, Responsibilities to provide clarification on this flexibility.</p> <p>Draft 4 of the standard implemented this change.</p>

Comment No.	Comment	Response
77	<p>Plant Operations Group responsibilities, 3<sup>rd</sup> dash. Also a training department task</p>	<p>12-14-06 conf call determined that the responsibility for training would be to evaluate how such changes impact simulator scenarios, JPMs, or other training issues, but the responsibility for evaluating the impact on TCAs should remain an operations group responsibility. No changes necessary.</p>
78	<p>Plant Operations Group responsibilities, 4<sup>th</sup> dash. This should be part of an Operator's normal duty. It does however require the utility to ensure the equipment, tools, or whatever are properly identified.</p> <p>Also see comment # 2, 13, 46, 57, 66</p>	<p>11-15-06 conf call determined that each plant should select their own verification frequency, since administrative controls such as locked or sealed containers may reduce the likelihood that a required tool would be unavailable.</p> <p>Draft 3 of the standard includes this change.</p>
79	<p>Plant Engineering Group responsibility heading.</p> <p>Owens the program and is responsible for maintenance of the program. This is design bases stuff and Engineering owns design bases.</p> <p>Also see comment # 36, 73, 75, 76</p>	<p>11-30-06 conf call determined that the standard should not attempt to establish the plant group that owns the TCA program, but instead to leave that up to each plant based on their needs. Revised the first paragraph under Section 6.0, Responsibilities to provide clarification on this flexibility.</p> <p>Draft 4 of the standard implemented this change.</p>

Comment No.	Comment	Response
80	<p>Plant Engineering Group responsibilities, last dash.</p> <p>What about determining if an action really needs to be a time critical action? Too many actions can overload the group. Staffing levels can not support reliance on too many actions. The program needs to evaluate the need for the action or determine another method (design change, evaluation) can be used to meet the requirement.</p> <p>Also see comment # 1, 20, 69</p>	<p>Draft 2 addressed this comment by adding the following to Section 9.0: "Obtain an amendment to the Licensing requirements".</p> <p>Draft 3 of the standard includes changes to Section 6.0 (Operations Group Responsibilities) and to Section 7.0 to further clarify the staffing issue.</p> <p>Draft 4 of the standard added a definition of Minimum Shift Staffing, as used in the standard.</p>
81	<p>Plant Procedures Group Responsibilities, last dash.</p> <p>There have been requests to include the required completion times for actions in the procedures. I personally do not care for this, but should the program require that TCA be somehow designated in the procedure, much like a commitment of sorts?</p>	<p>12-14-06 conf call determined that including completion times in the procedures is not appropriate and may even contribute to the inability to meet the completion time. No change necessary.</p>

Comment No.	Comment	Response
82	<p>Reasons for Validating TCAs, 1<sup>st</sup> bullet, 4<sup>th</sup> dash.</p> <p>Periodic evaluation of TCAs may be a good idea, but the resources will never be allocated. A requirement of this type in a program is only setting the program up for failure. I can not imagine management at the station (here anyway) allocating the resources to do validations every 2 years. Probably won't happen at 5 years either. This stresses the importance of keeping the number of TCAs to a minimum in order to reduce the burden on the operating staff as well as to ensure success of the program. If the program is too burdensome, it will just fall by the wayside. Not having a program sets the station up for inquisition by the regulators and others, but not maintaining the program may be just as bad or worse.</p> <p>Also see comment # 3, 25, 39, 51, 61, 70, 83</p>	<p>11-15-06 conf call determined that a 5-year frequency would be sufficient to detect unexpected or unanticipated challenges to TCA required times. This could be due to a combination of procedure, equipment and protocol changes that may not have been recognized as affecting the TCA during development of the change. In addition, the rate of operator turnover (and replacement with newly licensed operators) was considered as a factor. Therefore, periodic validation of the TCAs is a valuable tool that should remain part of the standard.</p> <p>The issue of validating long term actions was resolved by adding a new Section 8.1 that discusses validation methods for short or long TCA completion times.</p> <p>Draft 3 of the standard includes these changes.</p> <p>The conf call also addressed taking credit for ongoing training.</p> <p>Draft 3A of the standard includes this change.</p>

Comment No.	Comment	Response
83	<p>Reasons for Validating TCAs, 1<sup>st</sup> bullet, 4<sup>th</sup> dash. Why couldn't some of the longer term TCAs be justified or documented just like an ERG set point or an evaluation type of document. The time and or resources are just not available to perform a validation of this type.</p> <p>Also see comment # 3, 25, 39, 51, 61, 70, 82</p>	<p>11-15-06 conf call determined that a 5-year frequency would be sufficient to detect unexpected or unanticipated challenges to TCA required times. This could be due to a combination of procedure, equipment and protocol changes that may not have been recognized as affecting the TCA during development of the change. In addition, the rate of operator turnover (and replacement with newly licensed operators) was considered as a factor. Therefore, periodic validation of the TCAs is a valuable tool that should remain part of the standard.</p> <p>The issue of validating long term actions was resolved by adding a new Section 8.1 that discusses validation methods for short or long TCA completion times.</p> <p>Draft 3 of the standard includes these changes.</p> <p>The conf call also addressed taking credit for ongoing training.</p> <p>Draft 3A of the standard includes this change.</p>
84	<p>Validation Objectives, 2<sup>nd</sup> bullet.</p> <p>What about tools, easy access, lighting, labeling? This is all part of the program. We need to make sure that everything is in place for the TCA to be successful.</p>	<p>Changed per comment.</p> <p>Draft 2 implemented this change.</p>

Comment No.	Comment	Response
85	<p>Validation Aspects step 1 bullet.</p> <p>Should it really be SRO level of knowledge? I understand the intent, but the person most likely responsible for the program may not be or have been an SRO. Shouldn't this be more like someone knowledgeable in plant operations, procedures, and licensing bases. I know that this sounds a lot like an SRO, but am concerned that it may be interpreted differently.</p> <p>Also see comment # 4, 27</p>	<p>11-15-06 conf call determined that the team leader should possess "a level of knowledge commensurate with the task being validated, including the relation of the task to the TCA requirements."</p> <p>Draft 3 of the standard includes these changes.</p>
86	<p>Validation Performance step 1 last bullet.</p> <p>Why would you want to stop the validation? It seems like you might be able to get some information by continuing. Maybe the time requirements need to be re-evaluated. You most likely need to establish some type of baseline. Completing all actions will help.</p> <p>Also see comment # 32</p>	<p>Changed per comment # 32.</p>
87	<p>Validation Performance step 2.</p> <p>What about the use of mockups for performing tasks? What about briefing and/or rad requirements that may or may not be in place during a time when a TCA needs to be performed?</p> <p>Also see comment # 30, 53</p>	<p>11-30-06 conf call revised this as part of the resolution of comment 30. The intent is to avoid preconditioning the performer, not to exclude other pre-job brief topics, such as safety, ALARA, etc.</p> <p>Draft 4 of the standard implemented this change.</p>

Comment No.	Comment	Response
88	<p>Evaluation of TCA Validation, 3<sup>rd</sup> bullet.            Need to be careful here. This implies that an operator can not work a shift if a TCA is not met. I don't believe the failure to meet an action time prevents one from performing licensed duties.</p>	<p>12-14-06 conf call noted that the plant training program determines the level of crew or individual competency required for performing licensing duties. If the training program determines that the failure constitutes the inability to satisfy these requirements, then removal from shift duties is appropriate.            It should be noted that draft 4 of the standard moved this evaluation to the second bullet and modified the step language.</p>
89	<p>Evaluation of TCA Validation, last bullet. The time assumed in the TCA may also be off base. Maybe the action time needs to be re-visited and justified.</p> <p>Also see comment # 54</p>	<p>Changed per comment # 54.</p>
90	<p>Documentation section, 2<sup>nd</sup> bullet.            What valve times are to be used, IST times? Need to recommend something so that the industry is consistent.</p>	<p>11-30-06 conf call deleted requirement to record valve stroke times for the TCA program.</p> <p>Draft 4 of the standard implemented this change.</p>
91	<p>Documentation section, 3<sup>rd</sup> bullet.</p> <p>Record retention? Is the TCA validation a quality document?</p> <p>Also see comment # 22</p>	<p>12-14-06 conf call noted that a document that validates the ability to perform an action required to satisfy the plant licensing basis would be considered a quality record. Therefore, it is appropriate for this record to be retained in plant records.</p>

Comment No.	Comment	Response
92	In draft 6, the note (discussing tracking time sensitive actions in the TCA standard) at the Purpose section should be a bullet in the Purpose section instead of a note.	Moved the discussion of tracking time sensitive actions in the TCA program into a bullet in the Purpose section.  Draft 7 implemented this change.
93	In draft 6, section 8.6, add a basis for the criterion of 80% of TCA completion time.	Added a note to explain basis for the criterion.  Draft 7 implemented this change.
94	Consider whether section 9.0 is appropriate for this standard.	Feb 21, 2007 PWG meeting conf call approved moving this information to Attachment 1. Added a reference to the attachment in Section 8.6. Section 10.0, Documentation became Section 9.0.  Revision 0 implemented this change.



Comment No.	Comment	Response
95	Recent experience at Sequoyah (repeated valve packing adjustments made TCA manual valve impossible to operate within required time. Led to NRC inspection) highlights the need to strengthen the TCA standard requirements for periodically verifying locally operated equipment actually works.	<p>2-21-07 PWG meeting conf call approved the following:  Added new Section 6.0 responsibilities for Plant Operations (to verify local equipment works) and Work Control Groups (to ensure local equipment still works after maintenance), added requirement to record actual operating time for locally operated equipment to Section 7.0, added record keeping requirement to Section 9.0, Documentation.</p> <p>Revision 0 implemented this change.</p>
96	I was in training when the conference call was made on Time Critical so maybe this item was addressed. Here at (Plant) we place unique labels on all of the time critical components in the plant to help plant personnel in identifying them as such. It has proved invaluable several times and aids the Non Licensed Operators in identifying potential problems. Was unique labeling considered for the TCA Standard? Just a thought.	<p>Labeling TCA components was in Draft 1 of the Standard, but was removed in the 12-14-06 conference call. See comment #47.</p> <p>Revision 0 implemented this change.</p>
97	Need to state that the 5-year validation also applies to the locally operated equipment.	<p>2-21-07 PWG meeting conf call approved modifying Section 8.2 to indicate that the 5-year validation includes locally operated equipment.</p> <p>Revision 0 implemented this change.</p>

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Comment No.	Comment	Response
98	Add a note, reference section, basis section or footnotes explaining such things as why the time chosen for validation is every 5 years, instead of 2 years or some other timeline.	<p>2-21-07 PWG meeting conf call approved using notes, reference section or footnotes for this. Further review of the standard resulted in only two (2) steps where such explanations are warranted, and footnotes were added for each of these cases.</p> <p>Revision 0 implemented this change.</p>

Comment No.	Comment	Response
99	Requiring times assumed in the plant licensing basis to be tracked in the program is fine, but should limit the required validation / periodic re-validation to a smaller set of TCA based on risk, consequences, etc, in order to prevent undue burden on plant resources.	<p>Bill McSorley and Hank Stroup created the following changes, which were approved on 2-22-07 at the PWG meeting:</p> <ul style="list-style-type: none"> <li>•Revise Section 1.0 first bullet to state that the TCAs that are this program ensures can be accomplished are those that are in scope as defined in Section 5.0.</li> <li>•Revise Section 5.0 to limit the validation to those TCAs that are required to mitigate a design basis accident. Others may be excluded if they are of low risk or there is large margin between actual performance time and required time.</li> </ul> <p>Added requirement to Section 9.0 to maintain a record of cross-discipline reviews to justify exempting from validation certain TCAs as permitted in Section 5.0.</p> <p>Revision 0 implemented this change.</p>

Comment No.	Comment	Response
100	This program should not dictate required training, since plant training programs use Systematic Approach to Training guidelines to determine what needs to be trained and how often.	<p>The following changes to training responsibilities were approved on 2-22-07 at the PWG meeting:</p> <ul style="list-style-type: none"> <li>•Ensure personnel are trained on the TCAs that are selected for training using the Systematic Approach to Training process.</li> </ul> <p>Develop and maintain simulator (or in plant walkthrough) scenarios for those TCAs that are selected by the Systematic Approach to Training process</p> <p>Revision 0 implemented this change.</p>
101	Technical Specification should not be listed as a source of TCAs	<p>2-22-07 session of PWG meeting indicated that some plants have TCAs imbedded in Technical Specification Bases. At least two members noted that their plants do have TCAs in Technical Specifications. PWG determined to retain Technical Specifications in the source section of the standard.</p>
102	Add a responsibility for the RP group to inform Operations of RP measures that impact areas requiring access during performance of a TCA. Use language similar to the Security group responsibility.	<p>This change was approved at the 2-22-07 session of the PWG meeting.</p> <p>Revision 0 implemented this change.</p>

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Comment No.	Comment	Response
103	In section 8.4 step 10, need to add that the 3 performances should be by different crews.	<p>Since some TCAs will be performed by individuals and others by crews, the step was changed to note that the 3 performances should be by different performers or crews.</p> <p>This change was approved at the 2-22-07 session of the PWG meeting.</p> <p>Revision 0 implemented this change.</p>