

NRC INSPECTION MANUAL

IRAB

INSPECTION MANUAL CHAPTER 1245 APPENDIX C12

SAFETY CULTURE ASSESSOR
TRAINING AND QUALIFICATION JOURNAL

Effective Date: 05/21/2025

Table of Contents

| | |
|--|--------|
| Introduction | 1 |
| Safety Culture Assessor Competencies | 1 |
| Safety Culture Assessor Qualification Levels | 1 |
| Equivalency Justification Requirements | 2 |
| Review of Completed Training | 2 |
| Documentation | 2 |
| Qualification Interview or Board | 3 |
| Certification | 3 |
| Interview Documentation | 3 |
| Safety Culture Assessor Training Courses | 3 |
| Safety Culture in the ROP | 3 |
| Focus Group Facilitation | 3 |
| Building Your Leadership Potential Through Effective Communication (Senior SCA Only) | 4 |
| Leadership Orientation (Senior SCA Only) | 4 |
| Emotional Intelligence (Senior SCA Only) | 4 |
| Safety Culture Assessor Individual Study Activities (ISA) | 5 |
| ISA-1: Safety Culture in the Nuclear Industry | 6 |
| ISA-2: Survey Overview | 8 |
| ISA-3: Safety Culture Assessment Methods | 9 |
| ISA-4: Conducting IP 95003 Inspections | 10 |
| ISA-5: Safety Conscious Work Environment (SCWE) Overview | 13 |
| ISA-6: Safety Culture Theory and Research (Senior SCA Only) | 15 |
| Safety Culture Assessor On-the-Job Training (OJT) | 17 |
| OJT-1: Safety Culture Inspection Activity | 18 |
| OJT-2: Review Safety Culture Assessments | 20 |
| OJT-3: Shadow an Inspection Team Lead (Senior SCA Only) | 22 |
| Signature Card for Safety Culture Assessor Qualification | 23 |
| Signature Card for Senior Safety Culture Assessor Qualification | 25 |
| Safety Culture Assessor Certification | 26 |
| Senior Safety Culture Assessor Certification | 27 |
| Form 1: Safety Culture Assessor Equivalency Justification | 28 |
| Attachment 1: Safety Culture Assessor Competencies and KSAs | Att1-1 |
| Attachment 2: Improving KSAs for Senior Safety Culture Assessor Qualification | Att2-1 |
| Attachment 3: Revision History for IMC 1245 Appendix C12 | Att3-1 |

INTRODUCTION

The Office of Nuclear Reactor Regulation (NRR) developed this training and qualification program to certify individuals to be Safety Culture Assessors (SCAs) for performing safety culture assessments as outlined in Inspection Procedure (IP) 95002 and IP 95003, and other inspection activities related to safety culture. Any questions related to qualification as an SCA should be directed to the branch chief of the safety culture staff in NRR.

This document outlines the specific training and qualification requirements associated with developing safety culture assessment skills through individual study activities (ISAs), formal classroom and computer-based instruction, and on-the-job training (OJT). Training and qualification guidance associated with developing general inspection skills comes from IMC 1245, Appendices A and B. In general, ISA activities should be completed before OJT activities.

The SCA or Senior SCA does not necessarily need fully-developed inspector skills since **the assessor** functions as part of a team of inspectors. Therefore, the SCA qualification program only requires partial completion of IMC 1245 Appendices A and B as stipulated herein. However, a better understanding of integrated plant operations would be a valuable tool in assisting the SCA or Senior SCA in developing a comprehensive and integrated perspective regarding safety culture when compiling information from all groups interviewed and surveyed. Therefore, enrollment in system courses Westinghouse R-304P, R-504P, and R-624P (Westinghouse Technology Series), or GE BWR R-304B, R-504B, and R-624B (GE BWR Technology Series) while not required, would be extremely desirable.

Safety Culture Assessor Competencies

Qualification as a SCA requires completion of a variety of activities, each of which is designed to provide knowledge or practice a skill that may be important during an inspection that has a significant focus on safety culture, such as an IP 95002 or IP 95003 inspection. Sets of related knowledge, skills, and abilities required to successfully perform safety culture inspection tasks are referred to as competencies. Attachment 1 describes the competencies and associated knowledge, skills, and abilities (KSAs) for SCAs.

Safety Culture Assessor Qualification Levels

The qualification program has two levels based on education and experience: Safety Culture Assessor (formerly known as Level II SCA) and Senior Safety Culture Assessor (formerly known as Level I SCA). Qualification as an SCA will allow participation in inspections with a safety culture focus at licensed or vendor facilities. Qualification as a Senior SCA will allow the candidate to lead safety culture teams during inspections. In order to qualify as a Senior SCA, an individual must have participated as a qualified SCA on a safety culture or SCWE inspection. Equivalency justification will be considered on a case-by-case basis.

The factors to be considered in assessing a candidate's readiness for qualification as an SCA or Senior SCA will vary on a case-by-case basis. Consideration is also given to the ability of the candidate to effectively carry out safety culture assessment activities specified in IP 95003, such as conducting interviews and focus groups for SCAs, and leading safety culture inspection teams for Senior SCAs. An individual interested in pursuing qualification should meet with their supervisor and the branch chief of the safety culture staff in NRR to discuss relevant knowledge and experience to determine the appropriate qualification level to pursue or identify areas where

additional training is needed. The supervisor may choose to delegate this discussion to a qualified Senior SCA in NRR or the Regional office.

To qualify as an SCA, an individual must possess the KSAs to perform safety culture assessment activities at licensed and vendor facilities under the direction of a Senior SCA (see Attachment 1 for complete list of KSAs). This requirement may be satisfied by having recent (i.e., within the last 5 years) training and/or hands-on experience with the types of activities that may be important during an inspection that has a significant focus on safety culture, such as conducting focus groups and interviews, and reviewing causes analyses and organizational assessments for safety culture insights. Completion of the training in this qualification journal is designed to help the candidate develop the required KSAs to qualify as an SCA.

To qualify as a Senior SCA, one must either demonstrate high performance at the GG-13 level (or be a GG-14 or above) and additionally possess and demonstrate the KSAs to plan and lead safety culture assessment activities at licensed and vendor facilities (see Attachment 1 for complete list of KSAs). The KSAs required of a Senior SCA are more extensive than the KSAs required of an SCA because of the need to have a thorough understanding of safety culture theories and methods for assessing safety culture. Generally, Senior SCAs should have specialized experience and education in the areas of safety culture, human factors, and/or organizational factors. This requirement may be satisfied in several ways, including formal education in the social or behavioral sciences, by having hands-on inspection experience at licensed facilities performing safety culture assessment activities, or a combination of both. In addition, because of the responsibilities involved, a Senior SCA must have demonstrated leadership skills (e.g., have led activities of similar scope or significance). See Attachment 2 for recommendations for additional training to develop the KSAs needed to qualify as a Senior SCA.

Equivalency Justification Requirements

Previous work experience and training may be accepted as evidence of an equivalency justification for SCA or Senior SCA qualification, provided that the candidate already possesses the required knowledge and skills normally achieved by completing the training activities. The branch chief of the safety culture staff in NRR has the authority to accept previous experience and training as an alternate method for meeting the training activities contained in this training plan. In granting an equivalency justification, the branch chief of the safety culture staff in NRR should consider the candidate's ability to perform inspection activities without the benefit of the additional knowledge and regulatory perspective that would be gained by completing the specific training activities outlined in this plan. Equivalency justifications should be discussed with either a designated Senior SCA or the branch chief of the safety culture staff in NRR. Justifications can be documented using Form 1, "Safety Culture Assessor Equivalency Justification."

Review of Completed Training

Training activities must be discussed with a qualified SCA or Senior SCA designated by the candidate's supervisor, or with the branch chief of the safety culture staff in NRR.

Documentation

Documentation of completed training is recorded on the SCA Signature Card. Equivalency justification for formal training courses, individual study activities, and on-the-job activities are recorded on Form 1.

Qualification Interview or Board

All SCA candidates are required to complete a qualification interview with the branch chief of the safety culture staff in NRR and a qualified Senior SCA. All Senior SCA candidates are required to complete a qualification board with at least two qualified Senior SCAs and the branch chief of the safety culture staff in NRR. The qualification interview or board are used to evaluate how well the candidate can integrate and apply SCA or Senior SCA competencies to field situations. Upon completion of all requirements identified in the qualification journal, the qualification interview or board will confirm that the candidate has the necessary knowledge, skills, and abilities to independently conduct the prescribed NRC inspections. Review Attachment 1 for an understanding of the KSAs that you will be expected to demonstrate during the qualification interview or board. Individuals seeking certification as an SCA or Senior SCA must successfully pass a qualification interview or board even if previously qualified as an IMC 1245 inspector.

Certification

After successful completion of the qualification interview or board, the branch chief of the safety culture staff in NRR certifies the candidate as an SCA or Senior SCA and documents certification on the qualification signature card. The branch chief of the safety culture staff in NRR will prepare the formal certificate for the qualifying SCA or Senior SCA to be signed by the appropriate Division Director in NRR. In addition, a copy of the SCA Signature Card and certificate should be forwarded to the Office of the Chief Human Capital Officer to document the certification in the individual's training file.

Interview Documentation

The interviewers' recommendations are forwarded to the Division Director in NRR for certification. Upon certification, the qualification will be recorded in TMS by sending a request to TrainingSupport.Resource@nrc.gov.

SAFETY CULTURE ASSESSOR TRAINING COURSES

Safety Culture in the ROP

The purpose of the Safety Culture in the ROP training is to provide you with an overview, basic understanding, and familiarization with safety culture and the Reactor Oversight Process (ROP) treatment of safety culture. This training includes an online learning resource that allows you to explore safety culture concepts at your own pace. Note that this training is also required as part of ISA-4, "Safety Culture" in IMC 1245, Appendix B. All candidates for qualification as an SCA or Senior SCA are required to review the online learning resource, regardless of whether they previously completed the training as part of their inspector qualification journal. The training videos can be accessed via TMS, and the online learning resource can be accessed directly using the link below.

Link to Online Learning Resource: <http://papaya.nrc.gov/safetyculture/index.html> (internal)

Focus Group Facilitation

The purpose of the Focus Group Facilitation training is to learn how to conduct focus groups to gather the desired information from participants while reducing potential biases in their responses. The recommended training is a 2-day external training course. Alternative training

that meets the same objectives as the recommended training may be used as a substitute. You should meet with your supervisor and the branch chief of the safety culture staff in NRR to discuss alternative options. Additional information about the recommended training, including course offerings, is provided in the link below.

Recommended Training (Focus Group Facilitation Foundations): <http://www.gdiworld.com/>

Building Your Leadership Potential Through Effective Communication (Senior SCA Only)

The purpose of this course is to develop effective communication and interpersonal skills and facilitate leadership development by improving your ability to work effectively with others. This 2-day course will help you understand yourself as a communicator and apply this understanding to enhance your communication and interpersonal skills in multiple settings. The course reviews the communication cycle and the receiver/message interaction process, particularly as it relates to effective listening, perception, and civility. This foundational understanding of communication is then explored within the context of workplace situations that provide you an opportunity to demonstrate leadership including feedback, conflict management, collaboration and teamwork, and problem solving and critical thinking.

Leadership Orientation (Senior SCA Only)

This 2-day course is designed for future first line supervisors or team leaders. It covers information on the NRC's leadership philosophy, values and application of both. During class, participants will have the opportunity to define their own preferences for leadership attributes, styles, sources of power, influence, and direction, as well as complete a learning plan to set goals for themselves in each of these areas.

Emotional Intelligence (Senior SCA Only)

In this 1-day course, participants will learn to explore how the dimensions of emotional intelligence (EI), self-awareness, self-management, and social and relationship awareness can be used to guide thinking and actions and improve their personal effectiveness. This course includes an EI self-assessment; it uses exercises and learning activities to examine techniques for resolving conflict, improving communication, building productive relationships, and reducing stress.

Safety Culture Assessor Individual Study Activities (ISA)

ISA-1: Safety Culture in the Nuclear Industry

PURPOSE:

The purpose of this activity is to become familiar with the history of safety culture in the nuclear industry and the NRC approach to addressing safety culture through policies and oversight.

COMPETENCY AREA: Safety Culture Assessment

LEVEL OF EFFORT: 16 Hours

REFERENCES:

1. January 24, 1989 Policy Statement, "Conduct of Nuclear Power Plant Operations," *Federal Register*, volume 54, page 3424 <https://www.nrc.gov/reading-rm/doc-collections/commission/policy/54fr3424.pdf>
2. May 14, 1996 Policy Statement, "Freedom of Employees in the Nuclear Industry to Raise Safety Concerns without Fear of Retaliation," *Federal Register*, volume 61, no. 94, page 24336 <http://www.nrc.gov/about-nrc/regulatory/allegations/scwe-frn-5-14-96.pdf>
3. June 14, 2011 Policy Statement, "Final Safety Culture Policy Statement," *Federal Register*, volume 76, no. 114, page 34773 <http://www.gpo.gov/fdsys/pkg/FR-2011-06-14/pdf/2011-14656.pdf>
4. Davis-Besse Special Inspection Report 05000346/2004003, "Management and Human Performance Corrective Action Effectiveness" https://www.nrc.gov/reactors/operating/oversight/reports/davi_2004003.pdf
5. Regulatory Issue Summary (RIS) 2006-13, "Information on the Changes Made to the Reactor Oversight Process to More Fully Address Safety Culture" <https://www.nrc.gov/docs/ML0618/ML061880341.pdf>
6. Institute of Nuclear Power Operations (INPO), 12-012 "Traits of a Healthy Nuclear Safety Culture," (ML13031A707) <https://www.nrc.gov/docs/ml1303/ml13031a707.pdf>
7. NUREG-2165, "Safety Culture Common Language." <https://www.nrc.gov/reading-rm/doc-collections/nuregs/staff/sr2165/>
8. Inspection Manual Chapter (IMC) 0310, "Aspects Within the Cross-Cutting Areas" International Nuclear Safety Advisory Group (INSAG)-4, "Safety Culture" http://www-pub.iaea.org/MTCD/publications/PDF/Pub882_web.pdf
9. INSAG-13, "Management of Operational Safety in Nuclear Power Plants" http://www-pub.iaea.org/MTCD/publications/PDF/P083_scr.pdf
10. INSAG-15, "Key Practical Issues in Strengthening Safety Culture." http://www-pub.iaea.org/MTCD/publications/PDF/Pub1137_scr.pdf

EVALUATION CRITERIA:

At the completion of this activity, you should be able to:

1. Understand the evolution in the approach the NRC has taken to address safety culture for nuclear power reactor licensees.
2. Understand how the NRC uses safety culture in the ROP framework.
3. Understand the international approach to addressing safety culture.
4. Understand the nuclear power industry's (i.e., INPO's) approach to addressing safety culture.

TASKS:

Perform the following activities:

1. Review the documents listed in the reference section.
2. Review the NRC Safety Culture Webpage
3. Meet with either your supervisor or a designated qualified SCA or Senior SCA to discuss the items listed in the evaluation criteria.

ADDITIONAL READINGS/ REFERENCES:

The following documents are listed for additional information:

1. The Report of the B.P. U.S. Refineries Independent Safety Review Panel (concerning the B.P. Texas City Refinery Process Accident), January 2007.
<https://www.csb.gov/assets/1/20/csbfinalreportbp.pdf?13841>
2. Center for Chemical Process Safety, "Building Process Safety Culture: Tools to Enhance Process Safety Performance," 2005 <http://www.aiche.org/CCPS/PSCulture.aspx>

DOCUMENTATION: Obtain your supervisor's signature in the line-item for the Safety Culture Assessor Qualification Activities - Signature Card Item ISA-1.

ISA-2: Survey Overview

PURPOSE:

The purpose of this activity is to become familiar with survey methodology and how to evaluate the quality of surveys.

COMPETENCY AREA: Safety Culture Assessment

LEVEL OF EFFORT: 6 Hours

REFERENCES:

1. American Association for Public Opinion Research, "Best practices for Survey and Public Opinion Research": <https://aapor.org/standards-and-ethics/best-practices/>
2. Web Center for Social Research Methods" <https://socialresearchmethods.net/kb/survey.php>
3. "Constructing the Survey" <https://www.socialresearchmethods.net/kb/surv writ.php>

EVALUATION CRITERIA:

At the completion of this activity, you should be able to:

1. Describe what a survey is.
2. Describe the strengths and limitations of surveys.
3. Explain the main steps in developing and administering a survey.
4. Understand what factors to consider in evaluating the quality of surveys.

TASKS:

1. Read the information provided in "Best practices for Survey and Public Opinion Research" and in "Constructing the Survey"
2. Read the information provided in the Web Center for Social Research Methods.
3. Meet with either your supervisor or a designated qualified SCA or Senior SCA to discuss the items listed in the evaluation criteria.

DOCUMENTATION: Obtain your supervisor's signature in the line-item for the Safety Culture Assessor Qualification Activities - Signature Card Item ISA-2.

ISA-3: Safety Culture Assessment Methods

PURPOSE:

The purpose of this activity is to become familiar with guidelines for conducting safety culture assessments and various assessment methods.

COMPETENCY AREA: Safety Culture Assessment

LEVEL OF EFFORT: 18 Hours

REFERENCES:

1. NRC Inspection Procedure (IP) 95003.02, "Guidance for Conducting an Independent NRC Safety Culture Assessment."
2. Interview Techniques for Assessing Safety Culture (ML071830168).
<https://www.nrc.gov/docs/ML0718/ML071830168.pdf>
3. NEI 09-07, Revision 1, "Fostering a Healthy Nuclear Safety Culture."
<https://www.nrc.gov/docs/ML1414/ML14143A085.pdf>
4. IAEA Safety Culture Assessment Methods.
<https://gnssn.iaea.org/NSNI/SC/TRWSSCA/Presentations/05a%20IAEA%20SCSA%20Assessment%20Methods.pdf>
5. IAEA, Self-Assessment of Safety Culture in Nuclear Installations (IAEA-TECHDOC-1321). http://www-pub.iaea.org/MTCD/publications/PDF/te_1321_web.pdf

EVALUATION CRITERIA:

At the completion of this activity, you should be able to:

1. Understand common strategies used to assess safety culture.
2. Describe the different methods for collecting safety culture data during an IP 95003 inspection and their strengths and weaknesses.

TASKS:

Perform the following activities:

1. Review the documents listed in the reference section.
2. Meet with either your supervisor or a designated qualified SCA or Senior SCA to discuss the items listed in the evaluation criteria.

ADDITIONAL READINGS/ REFERENCES:

The following documents are listed for additional information:

1. IAEA, Safety Culture Assessment Review Team (SCART) Guidelines http://www-pub.iaea.org/MTCD/publications/PDF/svs_016_web.pdf
2. Canadian Nuclear Safety Commission Discussion Paper DIS-12-07, "Safety Culture for Nuclear Licensees." <http://www.nuclearsafety.gc.ca/eng/acts-and-regulations/consultation/history/dis-12-07.cfm>
3. Health and Safety Executive (HSE) Safety Culture Checklist. https://public-library.safetyculture.io/products/sc_hse-safety-checklist-for-hse-whh2tnziwxsiamfz
4. Safety Culture Assessment Tools in Nuclear and Non-Nuclear Domains (SCK-CEN-BLG-1085). <https://inis.iaea.org/records/c6dvz-8gp14/files/43099353.pdf?download=1>

DOCUMENTATION: Obtain your supervisor's signature in the line-item for the Safety Culture Assessor Qualification Activities - Signature Card Item ISA-3.

ISA-4: Conducting IP 95003 Inspections

PURPOSE:

The purpose of this activity is to become familiar with prior IP 95003 inspections to gain appreciation for how the inspections were implemented and the inspection results.

COMPETENCY AREA: Safety Culture Assessment

LEVEL OF EFFORT: 18 Hours

REFERENCES:

1. Palo Verde 95003 IR (ML080320562 and ML080320590)
2. Browns Ferry 95003 IR (ML13234A539)
3. Browns Ferry Confirmatory Action Letter (ML13232A105)
4. Arkansas Nuclear One 95003 IR (ML16161B279)
5. Arkansas Nuclear One Confirmatory Action Letter (ML16169A193)
6. Pilgrim Nuclear Power Station 95003 IR (ML17129A217)
7. Pilgrim Nuclear Power Station Confirmatory Action Letter (ML17214A088)

EVALUATION CRITERIA:

At the completion of this activity, you should be able to:

1. Understand how prior IP 95003 inspections have been implemented based on the site-specific issues.
2. Discuss what types of inspection and safety culture assessment issues have arisen for prior IP 95003 inspections.

TASKS:

Perform the following activities:

1. Search the IP 95003 inspection reports listed in the references for the relevant sections on safety culture and review the information. (Note: In the event further information is desired, contact the cognizant IP 95003 team leader.)
2. Meet with either your supervisor or a designated qualified SCA or Senior SCA to discuss the items listed in the evaluation criteria.

ADDITIONAL READINGS/ REFERENCES:

The following document is listed for additional information:

- Browns Ferry Inspection Plan (ML13070A377)

DOCUMENTATION: Obtain your supervisor's signature in the line-item for the Safety Culture Assessor Qualification Activities - Signature Card Item ISA-4.

ISA-5: Safety Conscious Work Environment (SCWE) Overview

PURPOSE:

The purpose of this activity is to learn the NRC's definition of SCWE and understand how the agency uses Chilling Effect Letters in response to SCWE issues at power reactors and vendor sites.

COMPETENCY AREA: Safety Culture Assessment

LEVEL OF EFFORT: 24 Hours

REFERENCES:

1. 10 CFR 50.7, "Employee Protection"
2. May 14, 1996 Policy Statement, "Freedom of Employees in the Nuclear Industry to Raise Safety Concerns without Fear of Retaliation," *Federal Register*, volume 61, no. 94, page 24336 <https://www.nrc.gov/about-nrc/regulatory/enforcement/fpolicy.html>
3. Regulatory Issue Summary (RIS) 2005-018, "Guidance for Establishing and Maintaining a Safety Conscious Work Environment" <https://www.nrc.gov/reading-rm/doc-collections/gen-comm/reg-issues/2005/ri200518.pdf>
4. NRC Allegation Manual <https://www.nrc.gov/docs/ML1700/ML17003A227.pdf>
5. IP 93100, "Safety Conscious Work Environment Issue of Concern Follow-up"
6. NRC Letter to Chicago Bridge & Iron, "Chilled Work Environment for Raising and Addressing Safety Concerns," April 2013 (ML13092A077, ML13149A351, ML16166A262) <https://www.nrc.gov/docs/ml1309/ml13092a077.pdf>
7. NRC Letter to Wolf Creek Operating Corp, "Work Environment Issues at Wolf Creek Generating Station – Chilling Effect," August, 2013 (ML13233A208, ML13267A161, ML15090A263, ML1508A560) <https://www.nrc.gov/docs/ML1323/ML13233A208.pdf>
8. NRC Letter to Watts Bar Unit 1, TVA, "Chilled Work Environment for Raising and Addressing Safety Concerns at the Watts Bar Nuclear Plant," March 2016 (ML16083A479) <https://www.nrc.gov/docs/ml1608/ml16083a479.pdf>

EVALUATION CRITERIA:

At the completion of this activity, you should be able to

1. Describe a Safety Conscious Work Environment (SCWE) and how it relates to safety culture.
2. Understand the legal basis for the importance of SCWE based on employee protection regulations in 10 CFR 50.

3. Describe a chilled work environment and the criteria in the Allegations Manual for determining if there is evidence of a chilled work environment.
4. Describe the circumstances that would prompt the NRC to send a Chilling Effect Letter to a licensed or vendor facility.

TASKS:

Perform the following activities:

1. Read 10 CFR 50.7, the 1996 Policy Statement on SCWE, and RIS 2005-018.
2. Review the guidance on SCWE and Chilling Effect Letters in the NRC Allegation Manual.
3. Review past chilling effect letters sent by the NRC to licensed and/or vendor facilities.
4. Review IP 93100, "Safety Conscious Work Environment Issue of Concern Follow-up" to understand how the NRC would perform a follow-up inspection to investigate SCWE.
5. Meet with the Agency Allegation Advisor to discuss the history of SCWE, indicators of a chilled work environment, and the NRC's use of Chilling Effect Letters.
6. Meet with either your supervisor or a designated qualified SCA or Senior SCA to discuss the items listed in the evaluation criteria.

DOCUMENTATION: Obtain your supervisor's signature in the line-item for the Safety Culture Assessor Qualification Activities - Signature Card Item ISA-5.

ISA-6: Safety Culture Theory and Research (Senior SCA Only)

PURPOSE:

The purpose of this activity is to become familiar with theories and research in safety culture and organizational culture.

COMPETENCY AREA: Safety Culture Assessment

LEVEL OF EFFORT: 40 Hours

REFERENCES:

1. Schein, E.H., (1990). Organizational Culture. American Psychologist. (Contact a Senior SCA for access to this reference)
2. Guldenmund, F. W. (2000). The nature of safety culture: a review of theory and research. Safety Science, 34(1), 215-257.
<https://www.nrc.gov/docs/ML1025/ML102500633.pdf>
3. Branch, K. M., and Olson, J. L. (2011). Review of the Literature Pertinent to the Evaluation of Safety Culture Interventions.
<http://www.nrc.gov/docs/ML1302/ML13023A054.pdf>
4. John P. Kotter (1995), "Leading Change: Why Transformation Efforts Fail." Harvard Business Review. https://hbr.org/1995/03/leading-change-why-transformation-efforts-fail-2?ab=at_art_art_1x4_s04
5. Carroll, J. S., and Hatakenaka, S. (2001). Driving Organizational Change in the Midst of Crisis. MIT Sloan Management Review. <https://sloanreview.mit.edu/article/driving-organizational-change-in-the-midst-of-crisis/>
6. Morrow, S., Koves, G., & Barnes, V. (2014). The relationship between safety culture and safety performance in U.S. nuclear power operations. Safety Science, 69, 37-47.
<https://www.sciencedirect.com/science/article/abs/pii/S0925753514000484?via%3Dihub>
7. Sorensen, J. N. (2002). Safety culture: A survey of the state-of-the-art. Reliability Engineering and System Safety, 76, 189-204. (ML082740187)
8. Ghosh, S.T. and Apostolakis, G.E. (2005). Organizational Contributions to Nuclear Power Plant Safety. Nuclear Engineering and Technology. (ML090640276)

EVALUATION CRITERIA:

At the completion of this activity, you should be able to:

1. Describe Schein's three-level model of organizational culture and how it relates to safety culture assessment strategies.

2. Understand past research on safety culture and organizational culture and how culture is theorized to relate to performance.
3. Understand research related to changing safety culture and the characteristics of good and poor safety culture interventions.

TASKS:

Perform the following activities:

1. Review the documents listed in the references.
2. Meet with either your supervisor or a designated qualified Senior SCA to discuss the items listed in the evaluation criteria section.

ADDITIONAL READINGS/REFERENCES:

The following documents are listed for additional information:

1. Schein, E. H. (2010). Organizational Culture and Leadership, fourth ed. Jossey-Bass, San Francisco.
2. Reason, J. (1997). Managing the Risks of Organizational Accidents. Ashgate.
<https://psnet.ahrq.gov/issue/managing-risks-organizational-accidents>
3. Dekker, S. (2007). Just Culture: Balancing Safety and Accountability. Ashgate.
4. Perin, C. (2005). Shouldering Risks: The Culture of Control in the Nuclear Power Industry. Princeton University Press.
5. Wiegmann, D.A. et.al (2002). A Synthesis of Safety Culture and Safety Climate Research. Technical Report ARL-02-3/FAA-02-2.
<https://www.nrc.gov/docs/ML1025/ML102500649.pdf>

DOCUMENTATION: Obtain your supervisor's signature in the line-item for the Safety Culture Assessor Qualification Activities - Signature Card Item ISA-6.

Safety Culture Assessor On-the-Job Training (OJT)

OJT-1: Safety Culture Inspection Activity

PURPOSE:

The purpose of this activity is to familiarize you with safety culture-related inspection tasks. This OJT will prepare you to independently conduct safety culture-related inspection activities.

COMPETENCY AREA: Safety Culture Assessment

LEVEL OF EFFORT: 40–80 Hours

REFERENCES:

1. IP 95003, " **Supplemental Inspection Response to Action Matrix Column 4 (Multiple/Repetitive Degraded Cornerstone) Inputs** "
2. IP 95002, "Supplemental Inspection **Response to Action Matrix Column 3 (Degraded Performance) Inputs**"
3. IP 71152, " **Problem Identification and Resolution (PI&R)** "
4. IP 40100, "Independent Safety Culture Assessment Follow-up"
5. IP 93100, "Safety Conscious Work Environment Issue of Concern Follow-up"

EVALUATION CRITERIA:

At the completion of this activity, you should be able to:

1. Describe the safety culture related inspection and assessment activities performed.
2. Demonstrate safety culture assessment skills.

TASKS:

Perform the following activities:

1. Participate as a note-taker for safety culture focus groups and/or interviews and facilitate at least one safety culture or SCWE focus group or interview during an inspection that has a specific focus on safety culture activities. For example, an IP 95003 or IP 95002 inspection, IP 93100, IP 40100, the SCWE portions of IP 71152, a SCWE-related inspection at a vendor facility, or other follow-up inspection activities related to a confirmatory order or confirmatory action letter that have a specific focus on safety culture.
2. Meet with either your supervisor or a designated qualified SCA or Senior SCA to discuss the items listed in the evaluation criteria.

DOCUMENTATION: Obtain your supervisor's signature in the line-item for the Safety Culture Assessor Qualification Activities - Signature Card Item OJT-1.

OJT-2: Review Safety Culture Assessments

PURPOSE:

The purpose of this activity is to familiarize you with reviewing and understanding licensee third-party and independent safety culture assessments.

COMPETENCYAREA: Safety Culture Assessment

LEVELOF EFFORT: 24 Hours

REFERENCES:

1. NRC IP 95003.02, "Guidance for Conducting an Independent NRC Safety Culture Assessment."
2. IP 95003, "Supplemental Inspection **Response to Action Matrix Column 4 (Multiple/Repetitive Degraded Cornerstone) Inputs**"
3. Nuclear Fuel Services Nuclear Safety Culture Assessment, June 2013.
<https://www.nrc.gov/docs/ML1326/ML13263A009.pdf>
4. Prairie Island Nuclear Generating Plant Nuclear Safety Culture Assessment, August 2008. <https://www.nrc.gov/docs/ML1024/ML102460761.pdf>
5. **Safety Culture Evaluation of the Davis-Besse Nuclear Power Station, April 2003.**
<https://www.nrc.gov/docs/ML0907/ML090700848.pdf>
6. **Resubmittal of Redacted Organizational Safety Culture and Safety Conscious Work Environment Independent Assessment Report and Action Plans for the Davis-Besse Nuclear Power Station, March 2005.**
<https://www.nrc.gov/docs/ML0506/ML050660425.pdf>
7. Independent Assessment of the Davis-Besse Nuclear Power Station Nuclear Safety Culture and Safety Conscious Work Environment, December 2008.
<https://www.nrc.gov/docs/ML0902/ML090270490.pdf>
8. **Independent Third-Party Nuclear Safety Culture Assessment of the NIST Center for Neutron Research, June 2023.** <https://www.nrc.gov/docs/ML2320/ML23207A041.pdf>

EVALUATION CRITERIA:

At the completion of this activity, you should be able to:

1. Understand the inspection requirements in IP 95003 for evaluating a third-party safety culture assessment.
2. Understand the information commonly included in safety culture assessments.

3. Describe the information needed during a safety culture inspection to evaluate a safety culture assessment.
4. Describe good and poor examples of safety culture assessment techniques.

TASKS:

Perform the following activities:

1. Obtain copies of safety culture assessments performed at licensed or vendor facilities (examples of publicly available assessments are included in the references, contact a Senior SCA for assistance in obtaining access to other assessments).
2. Review the safety culture assessments using the inspection requirements and specific guidance for evaluating the licensee's third-party safety culture assessment in IP 95003, and "Guidance for Evaluating Safety Culture Surveys" in IP 95003.02.
3. Meet with either your supervisor or a designated qualified Senior SCA to discuss the items listed in the evaluation criteria section.

Meet with either your supervisor or a designated qualified SCA or Senior SCA to discuss the items listed in the evaluation criteria section.

DOCUMENTATION: Obtain your supervisor's signature in the line-item for the Safety Culture Assessor Qualification Activities - Signature Card Item OJT-2.

OJT-3: Shadow an Inspection Team Lead (Senior SCA Only)

PURPOSE:

The purpose of this activity is to familiarize you with leading a safety culture assessment functional team.

COMPETENCY AREA: Safety Culture Assessment

LEVEL OF EFFORT: 120 Hours

REFERENCES:

- IP 95003, "Supplemental Inspection **Response to Action Matrix Column 4 (Multiple/Repetitive Degraded Cornerstone) Inputs**"

EVALUATION CRITERIA:

At the completion of this activity, you should be able to:

1. Describe effective techniques to direct the conduct of safety culture assessment activities. Describe any situations observed during the inspection where alternative approaches could have been employed to achieve a more desirable outcome.
2. Describe techniques employed to achieve open and effective communications with the team leader, the assistant team leaders, other inspection team members, regional management, and senior plant management.
3. Describe approaches for dealing with unforeseen issues during the inspection and lessons learned.

TASKS:

Perform the following activities:

1. Participate on an IP 95002 or IP 95003 inspection (or a combination of other safety culture assessments, SCWE allegation follow-up, etc. using IP 93100 or IP 40100) and shadow the safety culture team leader during the onsite inspection phase. Alternatively, if you are a qualified inspector, you may lead an IP 71152 biennial inspection—specifically the SCWE portion. Please discuss other options for fulfilling this task with the branch chief of the safety culture staff in NRR.
2. Meet with either your supervisor or a designated qualified Senior SCA to discuss the items listed in the evaluation criteria section.

DOCUMENTATION: Obtain your supervisor's signature in the line-item for the Safety Culture Assessor Qualification Activities - Signature Card Item OJT-3.

Signature Card for Safety Culture Assessor Qualification

| Employee Name: | Employee Initials/Date | Supervisor/Subject Matter Expert Signature/Date |
|---|-----------------------------------|--|
| <u>A. Basic and General Proficiency Inspector Qualification</u> | | |
| Note: Qualified reactor inspectors should indicate the date of completing all training requirements in IMC 1245 Appendix A and B and skip to Section E. Candidates who have not previously completed their qualifications in IMC 1245 Appendix A and Appendix B must complete Sections B-D below. | | |
| <u>B. Training Courses from IMC 1245, Appendix A and B</u> | | |
| 1. H-100 Site Access Training | | |
| 2. R-100 Reactor Concepts | | |
| 3. G-105 Conducting Inspections | | |
| 4. Effective Communication for NRC Inspectors | | |
| 5. Gathering Information for Inspectors through Interviews | | |
| 6. G-205 Root Cause and Incident Investigation Workshop | | |
| 7. Ethics Training (web-based) | | |
| 8. R-104B GE BWR Systems Overview <u>OR</u> R-104P Westinghouse Systems Overview | | |
| <u>C. Inspection Individual Study Activities (ISAs) from IMC 1245, Appendix A</u> | | |
| (ISA-3) Inspector Objectivity, Protocol, and Professional Conduct | | |
| (ISA-4) Fitness for Duty Rule | | |
| (ISA-5) Allegations | | |
| (ISA-6) NRC's Response to an Emergency at a Nuclear Facility | | |
| (ISA-16) Contacts with the Media | | |
| (ISA-18) Freedom of Information Act and the Privacy Act | | |
| (ISA-20) Documenting Inspection Findings | | |
| (ISA-21) Open Collaborative Working Environment & Ways to Raise Differing Views http://www.internal.nrc.gov/OE/dpo/index.html | | |
| (ISA-22) Overview of 10 CFR Part 50 | | |

| | | |
|---|--|--|
| (ISA-23) Overview of Parts 19 and 20 | | |
| Note: Complete the following elements of the ISAs in IMC 1245, Appendix A | | |
| (ISA-9) Exploring the Operator Reactor Inspection Program: Tasks 1, 2, 4, and 7. Complete evaluation criteria 1, 2, 3, 4, 5, and 9. | | |
| (ISA-15) Interaction with the Public: Tasks 1, 2, 3, 6, and 7, including review of applicable information regarding interacting with the public. Complete evaluation criteria 1, 2, 3, 7, 8 and 9. | | |
| (ISA-19) Entrance and Exit Meetings: Tasks 1 and 4. Complete evaluation criteria 1 and 2. | | |
| (ISA-24) Licensee Specific Regulatory Documents and Procedures: All tasks. Complete evaluation criteria 6. | | |
| (ISA-26) Exploring the Operating Reactor Assessment Program: Task 2. Complete evaluation criteria 4 and 5. | | |
| <u>D. Inspection ISAs from IMC 1245, Appendix B</u> | | |
| (ISA-4) Safety Culture | | |
| <u>E. Safety Culture Assessor Qualification Activities</u> | | |
| 1. Safety Culture ROP Training (web-based) | | |
| 2. Focus Group Facilitation Training | | |
| (ISA-1) Safety Culture in the Nuclear Industry | | |
| (ISA-2) Survey Overview | | |
| (ISA-3) Safety Culture Assessment Methods | | |
| (ISA-4) Conducting IP 95003 Inspections | | |
| (ISA-5) Safety Conscious Work Environment (SCWE) Overview | | |
| (OJT-1) Safety Culture Inspection Activity | | |
| (OJT-2) Review Safety Culture Assessments | | |

*Supervisor's Signature: _____ Date: _____

* Supervisor's signature indicates successful completion of all required courses and activities listed in this journal and readiness for the qualification interview. Supervisor may delegate this authority to a qualified Senior SCA in NRR or the Regional Office, or to the Branch Chief of the Safety Culture staff in NRR.

The appropriate Form 1, "Safety Culture Assessor Equivalency Justification," if applicable, must accompany this signature card and certification.

Copies: Assessor, Office of the Chief Human Capital Officer, Supervisor

Signature Card for Senior Safety Culture Assessor Qualification

| | | |
|---|--|---|
| | <u>Employee Initials/Date</u> | <u>Supervisor/Subject Matter Expert Signature/Date</u> |
| <u>Employee Name:</u> _____ | | |
| <u>A. Safety Culture Assessor Qualification</u> Note: Indicate the date when safety culture assessor qualification was completed. Attach safety culture assessor qualification card or equivalency justification. | | |
| <u>B. Inspection Experience as SCA</u> Note: Indicate the date of completion of an inspection as a qualified SCA. Inspection team lead or Senior SCA should provide signature. | | |
| <u>C. Training Courses</u> | | |
| 1. Building Leadership Potential Through Effective Communication | | |
| 2. Leadership Orientation | | |
| 3. Emotional Intelligence | | |
| <u>D. Senior Safety Culture Assessor ISAs and OJTs</u> | | |
| (ISA-6) Safety Culture Theory and Research | | |
| (OJT-3) Shadow an Inspection Team Lead | | |

*Supervisor's Signature: _____ Date: _____

* Supervisor's signature indicates successful completion of all required courses and activities listed in this journal and readiness for the qualification board. Supervisor may delegate this authority to a qualified Senior SCA in NRR or the Regional Office, or to the Branch Chief of the Safety Culture staff in NRR.

The appropriate Form 1, "Safety Culture Assessor Equivalency Justification," if applicable, must accompany this signature card and certification.

Copies: Assessor, Office of the Chief Human Capital Officer, Supervisor

Safety Culture Assessor Certification

Has successfully completed all of the requirements
to become a

Safety Culture Assessor

Branch Chief, Safety Culture staff/NRR Signature: _____

Date: _____

Division Director Signature: _____

Date: _____

Senior Safety Culture Assessor Certification

Has successfully completed all of the requirements
to become a

Senior Safety Culture Assessor

Branch Chief, Safety Culture staff/NRR Signature: _____ Date: _____

Division Director Signature: _____ Date: _____

Form 1: Safety Culture Assessor Equivalency Justification

Office/Region/Division Branch: _____

Employee Name: _____

Position: _____

Supervisor: _____

Training Journal Requirement(s) to be Waived: _____

Justification for Waiving Requirement(s) (identify equivalent training and/or experience for which the employee is to be given credit): _____

Qualifying individuals should discuss the basis for equivalency justification with a qualified SCA before bringing this to supervisor for approval.

Branch Chief's Recommendation

Signature/Date: _____

Division Director's Approval

Signature/Date: _____

Copies to:

Employee
Employee Branch Training File
Human Resources
Branch Chief for the Safety Culture staff, NRR

Attachment 1: Safety Culture Assessor Competencies and KSAs

1. Understand the legal basis for and the regulatory processes used to achieve the NRC's regulatory objectives:
 - a. Knowledge of the basis for the authority of the agency (regulatory framework)
 - b. Knowledge of the processes established to achieve the regulatory objectives (regulatory framework)
 - c. Knowledge of the NRC's Reactor Oversight Process and applicable inspection requirements (inspection)
 - d. Knowledge of the NRC's policies regarding safety culture and how safety culture is integrated into oversight activities (safety culture assessment)
2. Master the techniques and skills needed to collect, analyze, and integrate information using a safety culture focus to develop a supportable regulatory conclusion:
 - a. Ability to independently gather information through objective review, observation, and open communications (inspection)
 - b. Skill in determining acceptability of information by comparing to established criteria (inspection)
 - c. Ability to approach problems objectively, gather and integrate information, and develop a comprehensive understanding before reaching a conclusion (problem analysis)
 - d. Skill in analyzing and integrating information using a safety culture focus to identify the appropriate regulatory conclusion and regulatory response (safety culture assessment)
3. Demonstrate the personal and interpersonal skills needed to carry out assigned regulatory activities, either individually or as part of a team:
 - a. Ability to clearly express ideas or thoughts, carefully listen, and speak and write with appropriate safety focus and context (communication)
 - b. Ability to work collaboratively with others toward common objectives (teamwork)
 - c. Ability to work independently, exercise judgment, and exhibit flexibility in the completion of activities that include difficult or challenging situations
 - d. (self-management)
4. Understand and effectively implement appropriate methods for gathering information about safety culture:
 - a. Knowledge of various sources of information that can be used to provide insights about safety culture

- b. Knowledge of appropriate methods for gathering safety culture data and their strengths and weaknesses, including:
 - i. Individual and group interviews
 - ii. Structured and unstructured interviews
 - iii. Questionnaires and surveys
 - c. Behavioral observations and checklists
 - d. Ability to implement the different methods correctly, including, but not limited to:
 - i. Conducting focus groups and interviews in a manner that elicits the desired information while reducing potential biases in the responses
 - ii. Conducting reliable (i.e., repeatable) structured behavioral observations
 - iii. Conducting content analysis of written documentation and verbal communications
 - e. Ability to integrate results from applying the different methods to arrive at defensible conclusions
5. (Senior SCAs) Effectively apply theories and research in organizational and human behavior to plan safety culture assessments and evaluate the validity of assessments:
- a. Knowledge of theories and research in organizational and human behavior
 - b. Ability to determine the applicability and likely usefulness of various data-gathering methods under different circumstances
 - c. Knowledge of the requirements for developing, administering, and analyzing the results of surveys and questionnaires, including:
 - i. The strengths and weaknesses of different item types (Likert, BARS, forced-choice, etc.)
 - ii. The requirements for administering a survey to reduce potential biases in the responses
 - iii. Behavioral statistics and the appropriate methods, and their constraints, for analyzing survey data
 - iv. Statistical requirements for the different types of validity and reliability, and appropriate techniques to assess/measure/establish them
 - d. Knowledge of the rationale for a multiple-measures approach to assessment and the limitations of a single-method assessment
 - e. Knowledge of statistical and conceptual constraints on determining appropriate sample sizes for different types of data collection methods, and the biases introduced by different sample selection strategies

6. (Senior SCAs) Effectively lead individuals in the performance of safety culture activities:
- a. Demonstrated ability to direct and supervise individuals in performing the safety culture assessment activities
 - b. Demonstrated ability to coordinate and communicate effectively with the inspection Team Leader(s), other members of the inspection team, Regional management, and plant senior management
 - c. Demonstrated ability to effectively articulate and respond to any questions or challenges from internal and external stakeholders on the safety culture assessment and findings

Attachment 2: Improving KSAs for Senior Safety Culture Assessor Qualification

If an individual does not meet the education and experience requirements to qualify as a Senior SCA, he/she should take additional training or gain relevant experience to develop the KSAs required of a Senior SCA, as described in Attachment 1. In addition to the activities included in the training and qualification journal, advanced training is recommended in focus group facilitation, interviewing techniques, statistics and research methods in the behavioral sciences, and the theories and principles of organizational culture. This can be achieved through formal training and/or by gaining experience in conducting the types of tasks required by IP 95003 for safety culture assessments in similar environments. In addition, the individual should gain experience in leading activities that are of similar scope or significance as IP 95003 safety culture activities.

The individual is also strongly encouraged to take additional courses related to the topics listed below. Although not required, such courses provide additional coverage of the KSAs needed to perform safety culture assessment activities.

- Organizational psychology
- Human factors or human performance
- Behavioral science
- Organizational research methods
- Psychometrics
- Statistics in social or behavioral science applications
- Survey administration and research
- Organizational culture or safety culture

Recommended External Training Courses

- Seminars through ProAct Safety, Inc.: <http://www.proactsafety.com/>
- National Training Lab Institute: Diagnosing organizations with impact course: <https://www.ntl.org/diagnosing-organizations-with-impact-the-art-of-organizational-meaning-making/>
- Center for Chemical Process Safety: Building process safety culture: tools to enhance process safety performance (see case studies for self-study): <http://www.aiche.org/CCPS/PSCulture.aspx>
- National Safety Council: Building a work class safety culture course: <https://shop.acnsc.org/course/53/creating-a-world-class-safety-culture>
- George Mason University Department of Psychology courses: <https://psychology.gmu.edu/>

- Ashford University Online:
 - Introduction to Applied Behavioral Sciences (ABS 200)
 - Statistics for the Behavioral Sciences (PSY 325)
 - Research Methods in Psychology (PSY 326)
- University of Maryland Department of Psychology courses: <https://psyc.umd.edu/landing/Undergraduate>
- Johns Hopkins University Department of Psychology courses: <https://pbs.jhu.edu/undergraduate/courses/>
- Catholic University Department of Psychology courses: <http://psychology.cua.edu/>
- University of Michigan Human Factors Short Course (1-2 weeks) <https://ope.engin.umich.edu/pe/human-factors-engineering/>

Any questions related to qualification as a Senior SCA should be directed to a qualified Senior SCA or to the Branch Chief of the Safety Culture staff in NRR.

END

Attachment 3: Revision History for IMC 1245 Appendix C12

| Commitment Tracking Number | Accession Number Issue Date Change Notice | Description of Change | Description of Training Required and Completion Date | Comment Resolution and Closed Feedback Form Accession Number (Pre-Decisional, Non-Public Information) |
|----------------------------|---|--|--|--|
| N/A | ML11102A124 10/13/11 CN 11-020 | This is a new document issued for training and qualifications for safety culture assessors. | N/A | ML11102A124 |
| N/A | ML12166A543 09/26/12 CN 12-022 | Updated to add in specific ISAs and OJTs | N/A | ML12166A508 |
| N/A | ML14084A152 04/03/14 CN 14-009 | Updated to change Human Factors Branch Chief information and to add in new documents related to the Safety Culture Common Language | N/A | FBF 1245C12-1889 ML13275A321 FBF 1245C12-1890 ML13275A330 FBF 1245C12-1891 ML13275A355 |
| N/A | ML15114A460 07/01/15 CN 15-013 | Editorial changes. Resolution of comments from internal NRC and Regional Offices. Closure of feedback form 1245C12-2010 | N/A | ML1512A195 FBF 1245C12-2010 ML15182A106 |
| NA | ML16020A397 02/01/16 CN 16-004 | Addition of new Safety Culture Training link | NA | NA |
| N/A | ML16259A016 11/09/16 CN 16-029 | Addition of 2 training courses which were agreed upon by the IMC 1245 working group, as well as editorial changes | N/A | ML16259A018 |
| N/A | ML17090A254 05/24/17 CN 17-011 | Added in 2 new ISAs and changed the OJTs to reflect inspection experience with safety culture and SCWE. Also made major editorial and administrative changes | N/A | ML17093A068 |

| Commitment Tracking Number | Accession Number Issue Date Change Notice | Description of Change | Description of Training Required and Completion Date | Comment Resolution and Closed Feedback Form Accession Number (Pre-Decisional, Non-Public Information) |
|----------------------------|---|--|--|---|
| N/A | ML18232A402 08/23/18 CN 18-029 | Divided the qualification card table into 2 separate tables: one for Safety Culture Assessors and one for Senior Safety Culture Assessors. Also added in a requirement to serve as an SCA on an inspection team PRIOR to qualifying as a Senior SCA. | N/A | N/A |
| N/A | ML19050A020 02/28/19 CN 19-009 | Replaced obsolete iLearn training courses with current ones. | N/A | N/A |
| N/A | ML19263C895 01/13/20 CN 20-005 | Replaced obsolete iLearn training courses with new ones from the new TMS program. Also added a requirement that Senior SCAs be high-performing GG-13s and above. Added in a qualification board with the other Senior SCAs for completion of Senior SCA qualification. | N/A | ML19270E058 |
| N/A | ML25127A246 05/21/25 CN 25-012 | Completed administrative changes including new hyperlinks and updated training courses. Divided the signature page into two separate pages, one for SCAs and one for Senior SCAs. | N/A | N/A FBF 1245C12-2526 ML24116A151 |