NEI 09-07 [Revision 0]

Fostering a Strong Nuclear Safety Culture

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Nuclear Energy Institute

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- Hope Creek
- North Anna
- Braidwood
- South Texas Project

NOTICE

EXECUTIVE SUMMARY

Nuclear power plants are unique; both in the application of a technology that harnesses the energy of the atom and as an organization that can manage this technology safely. Safe and reliable operation of the U.S. nuclear fleet requires the diligent focus of a team of nuclear professionals. A key element of a nuclear power plant's safe operation – its nuclear safety culture – depends on every employee, from the board of directors, to the control room operator, to the field technician in the switchyard, to the security officers and to long term supplemental individuals on site. The Institute of Nuclear Power Operations' (INPO) *Principles for a Strong Nuclear Safety Culture* defines nuclear safety culture as an organization's values and behaviors—modeled by its leaders and internalized by its members—that serve to make nuclear safety the overriding priority.[1] The strength of an organization's dedication to safe operation can be seen in its nuclear safety culture.

This guideline on Fostering a Strong Nuclear Safety Culture describes the industry approach to assessing and addressing nuclear safety culture issues. It places primary responsibility on line management, and in particular, on the site leadership team.[2] The goal is to provide an ongoing holistic, objective, transparent and safety-focused process, which uses all of the information available (e.g., the corrective action program, performance trends, NRC inspections, industry evaluations, nuclear safety culture assessments, self-assessments, audits, operating experience, workforce issues and employee concerns program) to provide an early indication of potential problems, develop effective corrective actions and monitor the effectiveness of the actions. The ongoing assessment of nuclear safety culture is conducted using the terminology of INPO's nuclear safety culture principles.

The industry guideline also provides for multiple external looks at a site's nuclear safety culture. These include the NRC, industry evaluations (e.g., INPO), external nuclear safety review boards, and any external individuals asked to participate in safety culture assessments.

[1] The NRC and its stakeholders are currently in the process of developing a new common language for interacting on nuclear safety culture issues, including definitions and traits or principles of nuclear safety culture. When this effort is completed, the new language will be reflected in this document. This will minimize confusion and allow for more effective communication by the industry and its regulator.

[2] At some stations, the equivalent organization is the "Senior Management Team."

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1 THE IMPORTANCE OF FOSTERING A STRONG NUCLEAR SAFETY CULTURE

Nuclear power plants are unique; both in the application of a technology that harnesses the energy of the atom and as an organization that can manage this technology safely. Safe and reliable operation of the U.S. nuclear fleet requires the diligent focus of a team of nuclear professionals. A key element of a nuclear power plant's safe operation—its nuclear safety culture—depends on every employee, from the board of directors, to the control room operator, to the field technician in the switchyard, to the security officers and to contractors on site. The Institute of Nuclear Power Operations' (INPO) *Principles for a Strong Nuclear Safety Culture* defines nuclear safety culture as an organization's values and behaviors—modeled by its leaders and internalized by its members—that serve to make nuclear safety the overriding priority.[1] The strength of an organization's dedication to safe operation can be seen in its nuclear safety culture.

Nuclear safety culture is to an organization what personality is to an individual: an intangible facet that can be seen only through behaviors and espoused values. It is under constant change; it represents the collective behaviors of the organization, which adapt over time as the organization and its members change and apply themselves to their daily activities. As problems are encountered, the organization learns. Successes and failures become ingrained into the organization's nuclear safety culture and form the basis for the means by which the organization does business. These behaviors are taught to new members of the organization as the correct way to perceive, think, act and feel. Nuclear safety is a collective responsibility. No one in the organization is exempt from the obligation to ensure nuclear safety first.

INPO states that the strength of an organization's nuclear safety culture could lie anywhere along a broad continuum, depending on the degree to which the attributes of nuclear safety culture are embraced. Even though nuclear safety culture is an intangible concept that cannot simply be measured through quantitative means, it is possible to monitor the health of an organization's nuclear safety culture based on observable behaviors. When deviations from expected behaviors are noted, it is the obligation of the organization to promptly and thoroughly assess and correct such deviations. This monitoring and adjustment process itself facilitates the desired behaviors of a learning organization – one that places nuclear safety as its overriding priority and relentlessly seeks ways to continuously improve itself.

The nuclear power industry recognizes the importance of building and maintaining a strong nuclear safety culture. This takes the commitment of its leaders and the dedication of every individual. In depth assessments can effectively gauge the health of each nuclear power plant's nuclear safety culture. INPO Significant Operating Experience

[1] The NRC and its stakeholders are currently in the process of developing a new common language for interacting on nuclear safety culture issues, including definitions and traits or principles of nuclear safety culture. When this effort is completed, the new language will be reflected in this document and the Nuclear Safety Culture Process Manual. This will minimize confusion and allow for more effective communication by the industry and its regulator.

Report 02-4, *Reactor Pressure Vessel Head Degradation at Davis-Besse Nuclear Power Station*, recommends a periodic self-assessment to determine to what degree the organization has a healthy respect for nuclear safety and that nuclear safety is not compromised by production priorities. These assessments, and the actions taken in response to them, provide assurance that the proper attention to nuclear safety culture is in place in daily operations and behaviors.

Since nuclear safety culture evolves over time, it is also appropriate to review any evidence of problems on a frequent, ongoing basis. Personnel and organizational changes, budget challenges, handling of emergent issues, and day-to-day organizational dynamics can have a profound impact on what is viewed as important and hence can influence the behaviors and nuclear safety culture at the plant. The station management has many sources of data available that may indicate the potential of a nuclear safety cultural issue. This data includes station performance indicators, NRC inspection reports, the corrective action program, the employee concerns program, quality assurance audits and quality control inspections, self-assessments, benchmarking, and workforce issues.

The purpose of this document is to provide a framework for the operators of nuclear power plants to monitor their nuclear safety culture on a continuous and real-time basis. The guidance provided is intended to provide one means of accomplishing nuclear safety culture monitoring, but should not be viewed as the only way. This guideline forms the basis for developing station-specific tools that do address the elements discussed in this document and that each station can use to foster continuous improvement of nuclear safety culture.

2 PROCESS DESCRIPTION

The industry approach to assessing and addressing nuclear safety culture issues places primary responsibility on line management, and in particular, on the site leadership team. The purpose is to provide an objective, transparent and safety-focused process, which uses all of the information available (e.g., corrective action program, performance trends, NRC inspections, industry evaluations, nuclear safety culture assessments, self-assessments, audits, operating experience, employee concerns program, and workforce issues) to provide an early indication of potential problems, develop effective corrective actions and monitor the effectiveness of the actions.

While it is not possible to directly measure culture, and thus there must be some subjectivity, there are aspects of plant conditions which can be trended to determine if nuclear safety cultural issues contributed to the condition. Process weaknesses, discovered through audits, self-assessments, or inspections, also can provide symptoms of nuclear safety cultural problems. Similarly, the attitudes and behaviors of site personnel can be assessed through surveys, interviews and behavioral observations. It is the responsibility of the site leadership team to employ these tools and take effective action. The nuclear safety review board (or equivalent offsite review board) serves an important oversight function of this process. Their review challenges station leadership to

remain self critical. If they detect a lack of self critical behavior, they will direct more oversight through the use of industry peers or external review board members.

2.1 PROCESS ELEMENTS

The process is shown below and is comprised of nine distinct elements.

1. Process Inputs
2. Corrective Action Program
3. Nuclear Safety Culture Monitoring Panel
4. Other Input Sources
5. Site Leadership Team[2]
6. Site Response
7. Communication
8. External Review
9. Regulatory Oversight

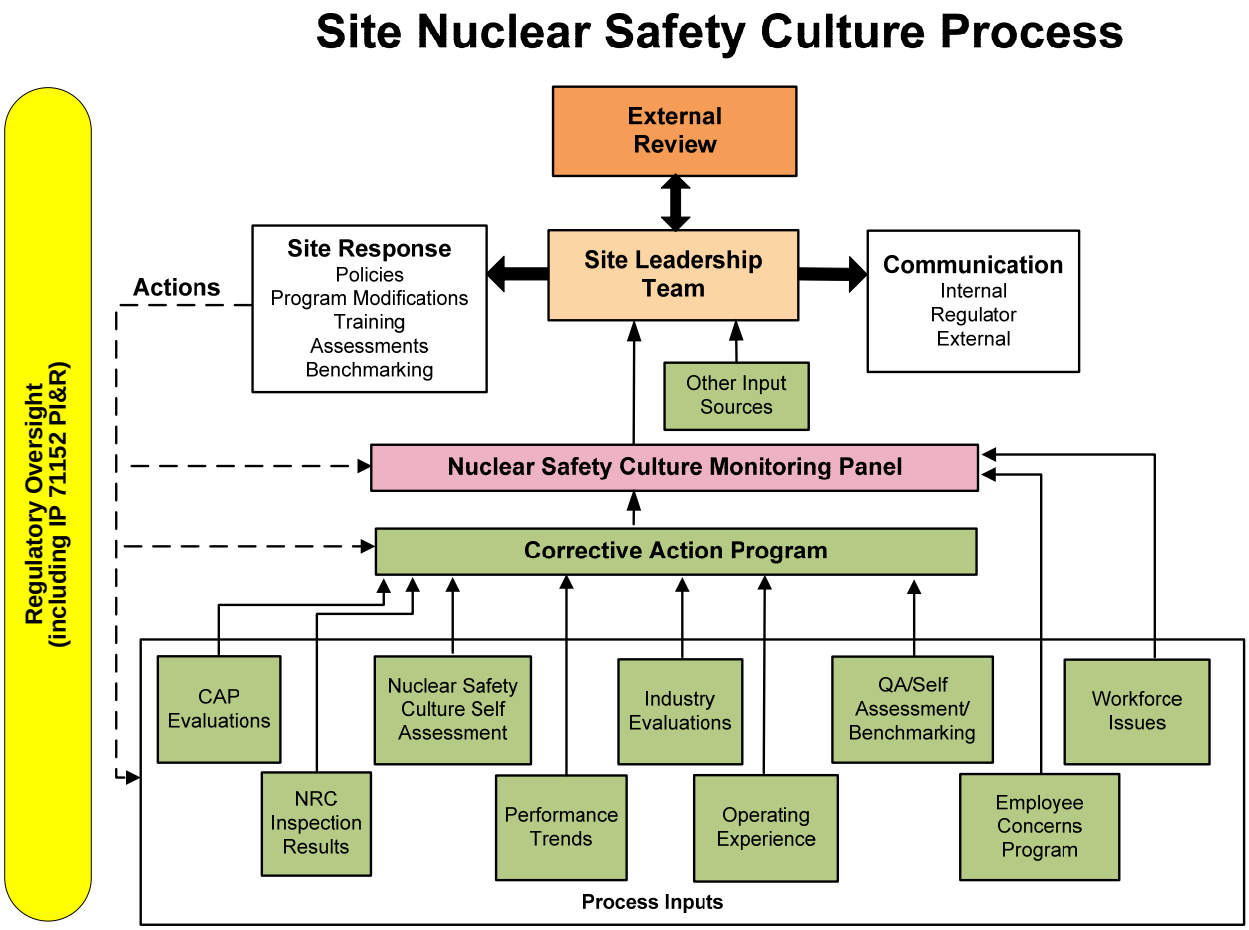

Figure 1: Site Nuclear Safety Culture Process

[2] At some stations, the equivalent organization is the "Senior Management Team."

2.1.1 Process Inputs

The following are the key inputs to the nuclear safety culture process. For each input, there are data (e.g., deficiencies, violations, weaknesses, or strengths) which can be reviewed in combination with data from other inputs to determine whether there is a nuclear safety culture issue. The INPO *Principles for a Strong Nuclear Safety Culture* describes the essential attributes of a healthy nuclear safety culture. They provide a useful framework for assessing and categorizing the data, and in combination, are used to identify potential nuclear safety cultural issues for action. Using a consistent model and terminology throughout the entire process will allow clear communication of issues which the entire site can understand and respond to.

- **NRC inspection results**. These include the baseline inspections of plant and processes (especially the problem identification and resolution inspection which also looks at safety conscious work environment and any past nuclear safety culture assessments), supplemental inspections, and event follow-up. If an inspection finding identifies that the deficiency may have been caused by a nuclear safety culture issue, this data can be used by the station in assessing its nuclear safety culture. Recurring issues receive careful review to determine if other process inputs are signaling problems in the same area.

- **Nuclear Safety Culture Self-Assessment**. INPO SOER 02-4 recommendation 2 states: Conduct a self-assessment to determine to what degree your organization has a healthy respect for nuclear safety and that nuclear safety is not compromised by production priorities. The self-assessment should emphasize the leadership skills and approaches necessary to achieve and maintain the proper focus on nuclear safety. Use INPO *Principles for a Strong Nuclear Safety Culture*, or equivalent document, as the basis for this self-assessment. Section 5 discusses one option for meeting this requirement. Other options include performing a survey or an inhouse self assessment.

- **Industry Evaluations.** Evaluations conducted by outside organizations can provide valuable insights. For example, INPO evaluations are conducted approximately every other year, ideally in the alternate year from the nuclear safety culture assessment. Included in the INPO evaluation is an assessment of nuclear safety culture, resulting in a nuclear safety culture assessment of a site almost every year. These indus*try evaluations are available to NRC on site.*

- **Operating Experience.** Information from other sites is available from INPO and NRC to improve performance. Any operating experience (OPEX) items tagged as safety culture-related by INPO or NRC are assessed for relevance to the station. Weaknesses in using this information are noted for the appropriate principle.

- **QA/Self-Assessment/Benchmarking/Behavioral Observations**. Each site performs a variety of self reviews. These include **audits required in** the quality assurance programs, department self-assessments, and benchmarking of other

sites in the industry (or other industries). It also includes behavioral observations by managers and supervisors in the field.

- **Employee Concerns Program**. This program provides opportunities to raise issues outside the normal chain of command. ECP issues typically are not entered into the CAP, but ECP trends are considered by the Nuclear Safety Culture Monitoring Panel.

- **Workforce Issues.** These include data sources that could reflect concerns within the workforce that may be precursors to nuclear safety culture or safety conscious work environment (SCWE) issues, such as: grievance trends, potential SCWE claims, hostile work environment claims, sexual harassment or peer on peer harassment, industrial safety trends, disciplinary action review board trends, changes in compensation / incentive programs, change management issues and workforce management issues (e.g., staffing, knowledge transfer, or certification issues).

- **Corrective Action Program (CAP) Evaluations**. In addition to being the program which is used to identify, analyze and resolve issues, the CAP is used to identify and evaluate trends across the entire data set of the CAP, for example, by using key words. The data from root cause and apparent cause evaluations also provide insights into potential nuclear safety culture issues and trends.

- **Site Performance Trends**. Each site has a broad suite of indicators to assess performance. These indicators go beyond the NRC performance indicators and assess intermediate outcomes, which, if not corrected, could lead to safety system failures, scrams or events. Trends can be developed in these indicators and the cause of the trend – process or design deficiencies, training, resources, or nuclear safety culture issues – can be examined and corrective action taken. Examples include operator workarounds, control room deficiencies, preventive maintenance deferred, and open positions. These trends are available to NRC on site.

- A site may have additional process inputs that it finds effective in helping to assess nuclear safety culture.

2.1.2 Corrective Action Program

The CAP is the program which is used to identify, analyze and resolve issues and conditions adverse to quality. Hence problems in the process inputs (with the exception of sensitive and confidential issues such as ECP and workforce issues) feed into the CAP where they are assessed for significance, including whether root or apparent cause analyses will be conducted. The CAP is also used to identify trends which can be assessed for nuclear safety culture issues. The data in the CAP is analyzed by process input owners and used by the Nuclear Safety Culture Monitoring Panel to look for nuclear safety culture issues.

2.1.3 Nuclear Safety Culture Monitoring Panel

The Nuclear Safety Culture Monitoring Panel monitors the inputs most indicative of the health of the nuclear safety culture to identify potential concerns that merit additional attention by the organization. The panel also identifies organizational behaviors and practices that are strengths for fostering a strong nuclear safety culture. This cross-functional panel is comprised of experienced individuals with diverse backgrounds and meets at least quarterly. Panel reports are provided to the Site Leadership Team (SLT). More details on this panel are included in section 3.

2.1.4 Other Inputs

There may be additional inputs that come directly to the attention of the site senior management, such as requests for information (allegations) or other sensitive information, which are not appropriate to be handled through the nuclear safety culture monitoring panel, but are important in assessing nuclear safety culture.

2.1.5 Site Leadership Team

The Site Leadership Team is responsible for reviewing plant performance and taking a holistic view of all of the potential indications of nuclear safety culture. The team is guided by the INPO principles. The team will address issues gleaned from the variety of process inputs described above. The Site Leadership Team will receive periodic reports from the Nuclear Safety Culture Monitoring Panel and as issues emerge which the panel believes warrants SLT immediate attention. While maintaining an ongoing sensitivity to nuclear safety culture issues, the team will meet at least semi-annually to discuss and assess cultural issues. Prior to the semi-annual meeting, the SLT will receive a written report from the Nuclear Safety Culture Monitoring Panel summarizing issues and trends identified from the process inputs. More details on the SLT are included in section 4.

2.1.6 Site Response

The Site Leadership Team is responsible for determining what actions are necessary to address any nuclear safety culture issues. In addition, the team is responsible for assessing the effectiveness of prior actions and redirecting these actions where appropriate. Site Response actions might include: changes in policies, program modifications, training, additional or more independent assessments, benchmarking, and other actions, described in section 4. The site responses provide feedback into the process inputs and into the corrective action program. The Nuclear Safety Culture Monitoring Panel reviews the effectiveness of the actions and reports results to the Site Leadership Team.

2.1.7 Communication

The Site Leadership Team is also responsible for the appropriate communication of its conclusions and actions. This communication is internal to the site workforce, and with corporate and external agencies as appropriate. Reports, such as the INPO evaluation and the nuclear safety culture assessment, will be available on site for NRC review.

2.1.8 External Review

The Nuclear Safety Review Board (or Offsite Review Board, or equivalent) provides an additional perspective to the Site Leadership Team. The experience and independent views of the board can assist the Site Leadership Team in many ways, including bringing an external look at cultural problems which may be invisible to those living in the culture day to day. The board serves an important oversight function of this process. Its review challenges station leadership to remain self-critical. If they detect a lack of self-critical behavior, they will direct more oversight of the meetings through the use of industry peers or external review board members. Corporate organizations or fleets may also be used to provide this external review.

2.1.9 Regulatory Oversight

The NRC provides regulatory oversight of the process through its resident inspectors and baseline and supplemental inspections. It also includes traditional enforcement and the NRC's allegation and chilling effect processes. The inspection process provides valuable independent oversight to the licensee. Inspectors' insights on safety culture are provided through the assignment of crosscutting aspects to inspection findings. If there are multiple crosscutting aspects in a year's time, the licensee uses all of the data available to assess whether a nuclear safety culture issue exists.

3 NUCLEAR SAFETY CULTURE MONITORING PANEL

3.1 PURPOSE AND MEMBERSHIP

The Nuclear Safety Culture Monitoring Panel (NSCMP) monitors process inputs which are indicative of the health of the organization's nuclear safety culture to identify strengths and potential concerns that merit additional attention by the organization.

The NSCMP is comprised of seasoned nuclear professionals with broad, diverse backgrounds at nuclear power plants. The panel, through its chairperson, reports to the Site Leadership Team. Membership includes experienced professionals with responsibilities for the process inputs (e.g., corrective action program, nuclear oversight, employee concerns, self-assessments, regulatory compliance). Some sites may also consider organizations such as human resources. While not required, attendance by an industry peer may be useful to add fresh perspective.

The panel has two major functions:

- Review emergent issues that could impact nuclear safety culture health to ensure the issues are appropriately addressed, and

- Periodically (at least quarterly[3]) assesses nuclear safety culture trends or potential issues and provides a report to the Site Leadership Team. The report includes trends or potential issues in the process inputs that could be early indications of a nuclear safety culture problem.

3.2 EMERGENT ISSUES

The NSCMP ensures that emergent issues with the potential to impact the site nuclear safety culture health are brought to the attention of the SLT. These could include externally- or internally-generated issues that indicate dissatisfaction with the site's nuclear safety focus, responsiveness to issues, effectiveness of the corrective action program, or treatment of personnel.

The NSCMP does not perform investigations and reinforces line ownership for sound implementation of the corrective action program whenever possible. Site-specific processes will determine the responsibility for handling emergent nuclear safety culture issues of a personal nature.

3.3 PERIODIC ASSESSMENT

The NSCMP is responsible for monitoring the key process inputs for trends or potential issues which may be early indications of weaknesses in the site nuclear safety culture and for reporting their results to the Site Leadership Team. These key inputs will demonstrate the inherent capabilities of the organization to identify and resolve problems in the nuclear power plant and the organization that operates it. The panel also identifies organizational behaviors and practices that are strengths for fostering a strong nuclear safety culture. It also reviews the progress in the corrective action program for previously identified nuclear safety culture issues, whether site identified, or identified in external reports, including NRC inspection reports, Nuclear Safety Culture Assessments, and industry evaluations. These process inputs are described in Section 2.1.1.

The NSCMP does the following:

- Collects process inputs for a defined time period
- Categorizes process inputs
- Bins the inputs to safety culture attributes
- Sorts data by principle and performs collegial challenge of aggregated data
- Looks for long term trends
- Provides ratings and recommended actions

[3] On initial startup of the program, it is recommended that the first two meetings occur monthly.

- Reviews status and effectiveness of prior safety culture-related actions

3.4 REPORT

The panel reviews all the process input data and looks for strengths and potential safety culture problems across, as well as within, each of the process inputs. The identified strengths and problems are linked to the principles of INPO's *Principles for a Strong Nuclear Safety Culture*. The report includes the scope of the inputs reviewed, specific trends of the process inputs over time, any adverse nuclear safety culture impacts identified, the organizations involved, and actions being taken to mitigate or address the impacts.

4 SITE LEADERSHIP TEAM NUCLEAR SAFETY CULTURE REVIEW

The Site Leadership Team (SLT) is comprised of the senior-most management personnel onsite charged with the safe operation of a nuclear plant. Although position titles may vary across the industry, the SLT is typically comprised of a Site Vice President, Plant Manager, and senior-most managers responsible for Operations, Maintenance, Engineering, Radiation Protection, Chemistry, Oversight, Security, and Regulatory Assurance. The chairperson of the NSCMP and the senior manager responsible for the Corrective Action Program, Operating Experience Program, and Self-Assessment Program also attend the SLT meeting, if not typically a member of the SLT. While not required, attendance by an industry peer may be useful to add fresh perspective.

To promote and monitor the health of the organization's nuclear safety culture, the SLT periodically (e.g., at least semi-annually[4]) assesses the station against the INPO *Principles for a Strong Nuclear Safety Culture*. This self-critique is intended to be reflective and performed by the SLT itself in a group setting. During this review, the SLT examines a variety of information that reflects the health of the organization's work environment to discern trends and early indications of nuclear safety culture challenges. The reports of the Nuclear Safety Culture Monitoring Panel and previous nuclear safety culture assessments, INPO evaluation nuclear safety culture findings, and any insights from the offsite nuclear safety review board (or equivalent) are reviewed by the SLT prior to the meeting.

Although a variety of inputs may be considered during the self-critique, the most valuable insight often comes from the frank discussion of nuclear safety culture based on the SLT's observations and insights. As the organization's senior leaders, the SLT possesses broad, diverse backgrounds in managing nuclear power plants and the nuclear professionals that make up the workforce. The SLT is often able to discern subtle trends and early indications of nuclear safety culture challenges from personal interactions, in-field observations, and other means. The end result is an improved understanding among

[4] On initial startup of the program, it is recommended that the first two meetings occur quarterly.

the members of the SLT of where their efforts to further improve the station's nuclear safety culture need to be applied.

The SLT's Nuclear Safety Culture Review is documented using the INPO *Principles for a Strong Nuclear Safety Culture* to identify strengths, areas found acceptable, and areas in need of improvement. Follow-up actions are tracked. Strengths and improvement opportunities that are identified are communicated back to the organization to drive desired behaviors and actions for fostering a strong nuclear safety culture. The following table provides examples of triggers for action by the SLT. Sites can develop their own specific triggers.

Table 1: Recommended Actions for Improvement Opportunities and Weaknesses

Improvement Opportunity/Weakness	Recommended Action
NSCA weaknesses or negative observations	Enter into CAP
Trends noted in NSCMP and SLT that do not constitute a significant concern but need to be addressed	Directed training, communication, etc.
A significant immediate indication of declining safety culture performance in a department (e.g., issue with supervisors in the department)	ACE or CCE
A significant immediate indication of declining safety culture performance at the station (e.g., issue with a department manager or senior manager)	ACE, CCE, RCE, or NSCA
An indication of a decline in safety culture over the last two quarters in a functional area (e.g., multiple workforce issues, emotional issues documented in CAP, etc.)	ACE, CCE or RCE
An indication of a declining trend over the last four quarters at the station (e.g., increase in allegations over historic averages, multiple Office of Investigation concerns in an area)	RCE or NSCA
A noticeable difference in a functional area from the remainder of the station culture (e.g., increase in CAP entries that are emotional, survey results indicate a measureable difference from the station norm, etc.)	ACE or RCE
Indications of a return of a previously addressed issue indicating corrective actions were not durable (e.g., return of similar issues to issues addressed two or more years ago and believed corrected)	ACE or RCE
A continuing decline in the culture of a functional area or the station indicating corrective actions are ineffective (e.g., repetitive issues after corrective actions have been completed)	RCE or NSCA
Request from NRC senior management due to their concern over performance (e.g., longstanding plant performance in column three of the action matrix or performance in column four)	Independent or third party NSCA
Recommendation from external safety board to conduct independent or third party assessment	Independent or third party NSCA

ACE = Apparent Cause Evaluation; CCE = Common Cause Evaluation; RCE = Root Cause Evaluation; NSCA = Nuclear Safety Culture Assessment

5 NUCLEAR SAFETY CULTURE ASSESSMENTS

5.1 INTRODUCTION

This section briefly describes one method of complying with the INPO SOER 02-4 Recommendation 2: "Conduct a self-assessment to determine to what degree your organization has a healthy respect for nuclear safety and that nuclear safety is not compromised by production priorities. The self-assessment should emphasize the leadership skills and approaches necessary to achieve and maintain the proper focus on nuclear safety. Use INPO *Principles for a Strong Nuclear Safety Culture*, or equivalent document, as the basis for this self-assessment." Other methods of complying include surveys and in house self assessments.

This option is entitled the Nuclear Safety Culture Assessment (NSCA) process. The process applies the INPO *Principles for a Strong Nuclear Safety Culture* to assess a site's nuclear safety culture in terms of the INPO principles and attributes using a survey, interviews, and observations. The assessment covers both company and long term supplemental personnel. The assessment report provides strengths, observations, weaknesses and recommendations for action. It can be used for self, independent or third party assessments of nuclear safety culture.

The NSCA builds on a program developed and implemented by the Utilities Service Alliance in response to INPO SOER 02-4. While the approach was originally designed to be conducted as a self-assessment, this industry guideline can be conducted as a self, independent or third party assessment by increasing the sample size of interviews and observations, providing team members who are not site employees, and providing additional focus on areas of concern. Table 2 at the end of this section summarizes the key aspects of the NSCA and the differences between a self, independent and third-party assessment.

Detailed information and instructions for conducting the NSCA are contained in the Nuclear Safety Culture Assessment Process Manual.[5]

5.2 REQUIREMENTS FOR NUCLEAR SAFETY CULTURE ASSESSMENT

INPO SOER 02-4 requires a nuclear safety culture assessment every other year. There are no specific requirements on how to conduct the assessment. Some utilities perform an assessment using company resources (either all onsite resources, or a combination of fleet or corporate resources); some include both internal assessors and external loaned utility assessors; some use consultants; and there may be other variations. The methodology (using a survey, or a combination of surveys, interviews and observations) and the nuclear safety culture model applied also vary across industry.

[5] Available through the Utilities Service Alliance.

NRC requires a third-party nuclear safety culture assessment for plants in column four of the ROP action matrix and has required an independent assessment in certain other instances for performance concerns. These assessments have been performed in a variety of ways and usually do not build on the same model as the self-assessments, resulting in no economies of scale and difficulty in comparing these assessments. In addition, considerable interaction is required with the NRC to obtain approval for the methodology for conducting the independent or third party assessment. The NSCA will be endorsed by the NRC and can be used for these types of assessments, as well as for self-assessments.

5.3 NSCA TEAM MEMBERSHIP

The NSCA team is comprised of a team leader, team executive, team members, host peer, administrative support, and an NSCA process manager. A behavioral scientist is optional for an independent assessment and required for a third party assessment. Details on the duties of the team and selection of the team leader and team members are provided in the NSCA Process Manual and are summarized in Table 2.

The team leader is responsible for the preparation and conduct of the assessment and for writing the assessment report. The team leader ensures that the team is adequately staffed to achieve the objectives of the assessment and selects the individuals to be interviewed. For a self-assessment, the team leader may be from another utility or from the site's fleet or corporate offices, but not from the site. For an independent or third party assessment, the team leader must be from a different utility.

The team executive supports the team leader and brings senior management insight to the team. The executive works with and mentors the team in the development of results by bringing an executive's viewpoint and personal experience in nuclear power plant management. For a self-assessment, the team executive may be from another utility or from the site's fleet or corporate offices, but not from the site. For an independent or third party assessment, the team executive must be from a different utility.

Team members conduct individual and group interviews and observe activities at the station working in two person teams and using standard sets of questions based on the INPO principles. The number of team members depends on the objectives of the assessment. Normally, a self-assessment includes eight team members; an independent or third party assessment will require more. For a self-assessment, half of the team is from the site and the other half from the site's fleet, corporate offices, or other utilities. For an independent assessment, there are no site members. No more than half may be from the site's fleet or corporate offices, and the rest from outside the company. For a third party assessment, all members must be from outside the company. Additional team members (e.g., expert consultants) may be added at the request of the Site Vice President.

The host peer and administrative staff are responsible for the logistics and site preparation and execution of the assessment. The process manager is responsible for

ensuring the proper conduct of the assessment, including the integration of interview and observation scoring.

A behavioral scientist (master's degree level) is suggested for an independent assessment and required for a third party assessment. This individual provides support to the team in developing insights and conclusions from the survey and interview data; provides statistical support; provides suggestions for any additional interviews or lines of inquiry; and helps develop the conclusions and recommendations of the assessment.

5.4 CONDUCT OF THE ASSESSMENT

Before the assessment begins, there are a number of important activities. These include selection of the team, performing a pre-assessment survey, pre-assessment document review, site preparation (including interview scheduling) and pre-assessment planning meetings. Details of pre-assessment activities and conducting the survey are provided in the NSCA Process Manual.

The self-assessment is typically one week in duration. An independent assessment's length would be determined by the team size and assessment scope. A third party assessment would normally require more team members and likely last two weeks. A team meeting is held before the assessment begins to review the objectives, schedule and assignments. The results of the survey are discussed to determine areas that the interviews explore in more detail. After the entrance meeting, the team begins its interviews and observations for the week. Craft and individual contributors are usually interviewed prior to managers. Detailed observation and interview forms, with questions based on the INPO principles, are provided in the NSCA Process Manual. Morning and afternoon meetings are held to adjust the schedule as necessary and to assess the data being collected. The administrative staff enter interview results into a data base which can track scoring by principle and attribute to ensure that all are covered. The scoring is automated and immediate, so that areas of concern become readily evident and additional interviews can be scheduled in targeted areas. An exit is conducted at the end of the assessment. The final report is prepared by the team leader and provided to the site in about a month. The report includes strengths, weaknesses, observations, conclusions and recommendations. The site is responsible for handling the report in accordance with its corrective action program; however, some sensitive actions may require handling outside the corrective action program. The site will also widely communicate the results of the assessment and actions planned to address weaknesses. The Nuclear Safety Culture Monitoring Panel assesses progress in addressing issues from the NSCA.

Table 2: Graded Nuclear Safety Culture Assessment

	Self-assessment	Independent Assessment	Third Party Assessment
Purpose	To meet INPO SOER 02-4 assessment every other year	Requested by Site VP who wants deeper/more specific review	Plant in Column 4 of action matrix
Base Assumptions	Pre-survey[6], document review, interviews, behavioral observation, four 2-person teams, exit, written report. One week.	Self-assessment plus review of additional area(s) of concern to Site VP Could require an additional team of assessors to address issues. Typically one week.	Self-assessment plus review of additional areas of concern determined by Site VP and Team Leader. Two weeks.
Work Product	Assessment Report, including: executive summary, survey and interview results by principle and attribute, follow-up from previous assessment, positive traits observed, conclusions and recommendations for improvement.	Same as Self-assessment with conclusions and recommendations on additional topic requested by Site VP.	Same as Self-assessment with conclusions and recommendations addressing performance issues.
Coverage	INPO principles and attributes; minimal additional topics. Typically 40-60 interviews, a number of observations, survey offered to 100%; goal of 70% response (including write in comments)	Same as self-assessment with coverage of additional areas of concern and typically 20% more interviews and observations.	INPO principles and attributes and additional topics selected to address performance issues. Approximately twice the number of interviews and observations as self-assessment
Team Makeup	Team Leader (outside site) Team Executive (outside site) 4 external team members (fleet, corporate or outside) 4 internal team members 1 Host peer 2 admin (host station) 1 NSCA or fleet process manager	Team Leader (outside utility) Team Executive (outside utility) 8-10 external team members (at least half outside utility, remainder fleet or corporate) 1 Host peer 2 admin (host station) 1 NSCA or fleet process manager Optional: Behavioral scientist (Master's level)	Team Leader (outside utility) Team Executive (outside utility) 10 external team members (outside utility) 1 Host peer 2 admin (host station) 1 NSCA or fleet process manager Behavioral scientist (Master's level)

[6] Other survey tools may be substituted for the NSCA survey if the results are provided to the assessment team in terms of the INPO principles and attributes.

Table 2: Graded Nuclear Safety Culture Assessment

	Self-assessment	Independent Assessment	Third Party Assessment
Team Roles	**Team Leader**: Interfaces with host site and team members prior to the assessment; conducts training with team before assessment; leads team to ensure adequate number of interviews and observations are conducted; briefs site management; conducts exit; prepares report obtaining team concurrence. **Team Executive**: Provides senior oversight of the team; preferred attendance for entire week. Interfaces with Site VP. **Team Members**: Conduct interviews and observations as two person teams; develop conclusions and findings **Host Peer**: Ensures logistics including badging, interview and observation scheduling; coordinates survey administration **Admin**: Ensure smooth execution of assessment and manage data collection. **Process Manager**: Ensures NSCA process is being followed.	Same as Self-assessment. **Behavioral scientist** works at the direction of the Team Leader. Can provide insights into data analysis, interviewing techniques, and team findings and recommendations.	Same as Self-assessment. **Behavioral scientist** works at the direction of the Team Leader. Can provide insights into data analysis, interviewing techniques, and team findings and recommendations.
Training	**Team Leader**: Industry developed training and previous assessor experience **Team Members**: Interviewing skills training (or experience in conducting evaluations which involve interviewing) and team training prior to the assessment. **Admin**: Orientation by qualified Team Leader	Same. **Behavioral scientist** (Master's level) will be familiar with the NSCA assessment methodology. Has experience in sampling techniques.	Same. **Behavioral scientist** (Master's level) will be familiar with the NSCA assessment methodology. Has experience in sampling techniques.
Document Review	CAP, root cause evaluations past 2 years, policies on nuclear safety culture and SCWE, site performance indicators, QA audits, self-assessment and benchmarking reports, last nuclear safety culture assessment, NRC assessment letters, review ROP results on NRC website.	Same, with any additional materials provided by Site VP.	Same, with any additional materials provided by Site VP, and NRC reports related to performance.