

Current USA NSCA II Tool Box

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Assessment of Nuclear Safety Culture: Overview

Tab A1

Introduction

This section briefly describes 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 contractor personnel. The assessment report provides strengths, weaknesses and recommendations for action.

The NSCA builds on a very successful program developed and implemented over the past five years by the Utilities Service Alliance in response to INPO SOER 02-4, Recommendation 2, which calls for sites to conduct a nuclear safety culture assessment every other year. While the USA approach is 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, as requested by the site vice president. The table 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.

Current Requirements for Nuclear Safety Culture Assessment

In developing the NSCA, industry looked at what the requirements and current practices were for conducting nuclear safety culture assessments. INPO SOER 02-4, Recommendation 2 calls for a nuclear safety culture assessment every other year. There are no specific requirements on how to conduct the assessment. Some utilities do an assessment entirely in-house using company resources (either all onsite resources, or a combination of fleet or corporate resources); some are in the USA program of 17 stations which include both internal assessors and external loaned utility assessors; some use consultants; and there may be other variations. The methodology (using just a survey, or surveys and interviews and observations) and the safety culture model applied also vary across industry. The industry also looked at the IAEA's Safety Culture Assessment Review Team methodology for lessons learned in developing an effective common industry approach. Adoption of the NSCA Process Manual will provide a consistent approach across industry and will adopt the common language of the INPO *Principles for a Strong Nuclear Safety Culture*.

NRC requires a third-party nuclear safety culture assessment for plants in column 4 of the action matrix and has required an independent assessment in certain other instances when it is concerned about performance and substantive crosscutting issues. These assessments have been ad hoc and usually do not build on the same model as the self assessments, resulting in no economies of scale and difficulty in comparing the two assessments. (This is often the case because self assessments commonly use the INPO nuclear safety culture model of principles and attributes, whereas the independent or third party assessments have been organized around specific issues and the NRC's nuclear safety culture components and aspects.)

Assessment Objective

The objective of the assessment is to evaluate the health of the station's nuclear safety culture, identify areas of strengths and weaknesses, and provide recommendations to station management to improve or sustain this health in terms of the INPO principles and attributes of a strong nuclear safety culture. In addition, the station may request additional areas to be assessed, for example, when the station is required to conduct an independent or third party assessment.

NSCA Team Membership

The team membership includes 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 are provided in the NSCA process manual, Tab B1. Selection of the team is discussed in Tab B2.

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 to bear 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 and attributes. 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 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, in particular, 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 data, both survey and interviews; provides statistical support; provides suggestions for any additional interviews or lines of inquiry; and helps develop the conclusions and recommendations of the assessment.

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 by the team, site preparation (including interview scheduling) and pre-assessment planning meetings. Details of pre-assessment activities are provided in the NSCA process manual, Tab B2. Details on conducting the survey, which is automated, sent to the entire site population, and can distinguish demographics of level in the organization and department, are in Tab C.

Details on conducting the assessment are provided in Tab B3 of the NSCA process manual. The self assessment is one week in duration. An independent assessment's length would be determined by the team size and scope. A third party assessment would normally require more team members and likely last two weeks. A team meeting is held the Sunday before the assessment begins to review the objectives, schedule and assignments. The results of the survey are discussed to determine areas that the interviews should closely examine. After the entrance meeting on Monday, 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 and attributes, are provided in Tabs D and E of 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. Senior management is briefed on the results Thursday evening and an exit is conducted Friday. The final report is prepared by the team leader and provided to the site in about a month. The site is responsible for handling the report in accordance with its corrective action program. 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 details of the final report are provided in the NSCA process manual, Tab B4.

The final assessment report will include as a minimum:

- An overall assessment summary with a rollup scoring chart of the 8 Principles
- A pre-assessment survey rollup scoring chart of the 8 Principles
- Assessment results categorized by the 8 Principles
- Team recommendations for improvement
- Executive Summary
- Background
- Assessment Methodology
- Assessment Results by Principle and Attribute
- Follow-up of Weaknesses / issues from Previous NSC Assessment
- Positive Organizational Traits Noted During the Assessment
- Summary of Recommendations
- Special Licensee's requests such as the issues required to be covered in an independent or third party assessment.

Additional Tabs in this manual address INPO documents (Tab L), NRC and NEI documents (Tab M) and Tools to assist in conducting interviews (Tab N1).

Table 1**Graded Nuclear Safety Culture Assessment**

	Self Assessment	Independent Assessment	Third Party Assessment
Purpose	To meet INPO SOER 02-4 (Davis Besse) biennial assessment	Requested by Site VP who wants deeper/more specific review	95003: Plant in Column 4 of action matrix
Base Assumptions	Standard Assessment (pre-survey ¹ , document review, interviews, behavioral observation, four 2 person teams, exit, written report) One week.	Standard 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.	Standard 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 Standard Assessment, with conclusions and recommendations on additional topic requested by Site VP.	Same as Standard Assessment with conclusions and recommendations addressing 95003 issues.
Coverage	INPO principles and attributes; minimal additional topics. Typically 40-60 interviews, 15 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 perhaps 20% more interviews and observations.	INPO principles and attributes and additional topics selected to address 95003 issues. Approximately twice the number of interviews and observations as self assessment

¹ Surveys performed by contractors may be substituted for the USA survey if the results are provided to the assessment team in terms of the INPO principles and attributes.

	Self Assessment	Independent Assessment	Third Party Assessment
Team Makeup	<p>Team Leader (outside site)</p> <p>Team Executive (outside site)</p> <p>4 external team members (fleet, corporate or outside)</p> <p>4 internal team members</p> <p>1 Host peer</p> <p>2 admin (host station)</p> <p>1 NSCA or fleet process manager</p>	<p>Team Leader (outside utility)</p> <p>Team Executive (outside utility)</p> <p>8-10 external team members (at least half outside utility, remainder fleet or corporate)</p> <p>1 Host peer</p> <p>2 admin (host station)</p> <p>1 NSCA or fleet process manager</p> <p>Optional: Behavioral scientist (MA level)</p>	<p>Team Leader (outside utility)</p> <p>Team Executive (outside utility)</p> <p>10 external team members (outside utility)</p> <p>1 Host peer</p> <p>2 admin (host station)</p> <p>1 NSCA or fleet process manager</p> <p>Behavioral scientist (MA level)</p>

	Self Assessment	Independent Assessment	Third Party Assessment
Team Roles	<p>Team Leader: Interfaces with host site and team members prior to the assessment; conducts ½ day training with team Sunday before assessment; leads team to ensure adequate number of interviews and observations are conducted; briefs site management; conducts exit; prepares report obtaining team concurrence.</p> <p>Team Executive: Provides senior oversight of the team; preferred attendance for entire week; required Wed-Friday. Interfaces with site VP.</p> <p>Team Members: Conduct interviews and observations as two person teams; develop conclusions and findings</p> <p>Host Peer: Ensures logistics including badging, interview and observation scheduling; coordinates survey administration</p> <p>Admin: Ensure smooth execution of assessment and manage data collection.</p> <p>Process Manager: Ensures NSCA process is being followed.</p>	<p>Same as Self Assessment.</p> <p>Behavioral scientist works at the direction of the Team Leader. Can provide insights into data analysis, interviewing techniques, and team findings and recommendations.</p>	<p>Same as Self Assessment.</p> <p>Behavioral scientist works at the direction of the Team Leader. Can provide insights into data analysis, interviewing techniques, and team findings and recommendations.</p>

	Self Assessment	Independent Assessment	Third Party Assessment
Training	<p>Team Leader: Industry workshop training and previous assessor experience</p> <p>Team Members: Interviewing skills training (or experience in conducting evaluations which involve interviewing) and ½ day team training prior to the assessment.</p> <p>Admin: orientation by qualified Team Leader</p>	<p>Same.</p> <p>Behavioral scientist (Masters Level) will be familiar with assessment methodology.</p>	<p>Same.</p> <p>Behavioral scientist (Masters Level) will be familiar with assessment methodology.</p>
Document Review	<p>CAP, root cause evaluations past 2 years, policies on nuclear safety culture and SCWE, site process PIs, QA audits, self assessment and benchmarking reports, last nuclear safety culture assessment, NRC assessment letters, review ROP results on NRC website.</p>	<p>Same, with any additional materials provided by Site VP.</p>	<p>Same, with any additional materials provided by Site VP, and 95003 related reports.</p>