Enclosure 95003.02-D
Guidance for Structured Behavioral Observations

This enclosure provides guidance for developing and using structured behavioral observation checklists to identify patterns of behaving related to the components of safety culture. This enclosure does not provide behavioral observation checklists for the operating experience and self-assessment safety culture components because they are process-type components and don't lend themselves to behavioral observation.

1. Overview

   Behavioral Observation Checklists involve the use of a structured format to record observational data. Key observable attributes of behaviors associated with safety culture are listed in checklist fashion, which ensures structured collection of data associated with observations. The structure also allows quantification of observational information. Behavioral Observation Checklists may also be used to guide and focus observations without quantifying the information collected.

2. Strengths

   - Data collected reflect real activities (versus respondent opinions or perceptions).
   - Multiple observations of similar activities (e.g., turnovers) allow quantification of information across multiple occurrences of the activity.
   - Observer is non-intrusive and does not interrupt activity.
   - Checklist format ensures similar information will be collected across multiple observers.
   - When quantitative data are not obtained or cannot be reported due to limited observations, qualitative data can be useful.

3. Limitations

   - Observer's presence may affect the manner in which the activity is conducted.
   - In some cases, multiple observations of a similar activity are not possible.
   - Unless multiple observations of a similar activity are conducted, quantitative data cannot be reported.
   - Those observed may avoid discussing any sensitive topics in the presence of the observer.

4. Applications

   To be completed when observing:

   - licensee decision-making processes, including goal-setting, oversight, and work planning sessions;
   - the actual performance of work activities, including activities for which formal procedures and standards of behavior exist;

- communications, including interactions between managers and staff, between peers, as well as interdepartmental, intradepartmental and external communications; and

- training.

5. Guidance:

   - Identify the categories of activities that will be observed. Select activities to observe based on their relevance to specific safety culture components to be assessed with this data-collection method, as defined in the assessment plan.

   - Through discussion with knowledgeable licensee personnel, identify the frequency with which the selected activities typically occur and determine the number of observations to be scheduled for each category of activity. If structured behavioral observation will be the primary method of collecting data about a specific safety culture component (e.g., decision-making), plan to observe a minimum of 25 activities of interest over the course of a one-week inspection. A minimum of 15 observations may be sufficient if behavioral observation will be used as a supplement to other information-gathering methods.

   - To develop consistency in using the checklists among different observers,

     - discuss the checklist items in advance and determine how they will be used;

     - jointly observe several of the same activities;

     - compare the results obtained by the different observers when observing the same activity;

     - discuss and resolve any differences in how the checklist items were interpreted;

     - revise the checklist items, as necessary.

   - For each category of activity to be observed, select a subset of the checklist items below or develop additional items, based on the nature of the activity and the safety culture components to be assessed. Do not plan to collect data about all of the safety culture components from any one observation, because the behaviors associated with some components do not occur with sufficient frequency to be provide an adequate sample of observations (e.g., budget planning meetings involving corporate and site management that might provide insights related to the Resources component).

   - Include no more than 15 items on a single checklist. Longer checklists are difficult to use and searching for items on the checklist can distract the observer.

   - Use the same checklist items when observing activities that fall into the same category of activities, so that the frequencies of the behaviors of interest can be determined.

   - For activities performed frequently during the inspection (e.g., shift turnover, pre-job briefs, and surveillance and maintenance activities), plan to observe up to 25 of the activities during the inspection.

- For infrequently performed activities (e.g. weekly management/staff meetings, all-hands meetings, personnel action meetings) plan to observe a sample of convenience (i.e., perform the observation if one occurs during the inspection and if safety culture assessors are available at the time.)

- Maintain the checklists used for each observation, even if no data were collected, in order to document the sample size.

- For each checklist created, the safety culture assessor should note:

  - the date and time of the observation;

  - the activity observed (e.g., pre-job briefing, shift turnover, plan-of-the-day meeting, department meetings, a maintenance job, corrective action review meeting);

  - the levels of management and staff involved (e.g., senior management, functional area management, middle management, first-line supervisors, staff or contractors);

  - the functional area(s) involved (e.g., operations, maintenance, radiation protection, engineering);

  - the number of individuals involved, and

  - other characteristics of the activity that can be used to compare and contrast data collected from different activities.

- Provide space on the checklist for the safety culture assessor to add notes that record more details about the interactions observed. For example, one of the checklist items below asks, "Was risk or nuclear safety discussed?" If the answer is yes, the safety culture assessor should add a description of the context in which risk or safety was discussed, the extent of the discussion, and an assessment of it. However, the additional information should be recorded only after the observation is completed, in order to ensure that the safety culture assessor is not distracted from observing.

- Following the observation, the safety culture assessor should also document any qualitative assessment of the interaction or work activity observed, related to the safety culture components. This information will be necessary to ensure that the observation data are appropriately interpreted.

- When all observations have been completed, summarize the following:

  - The number of observations made of each category of activity;

  - The extent to which behaviors were observed that are consistent with the safety culture components;

  - The extent to which behaviors were observed that are inconsistent with the safety culture components; and

  - Any qualitative information necessary to interpret properly the quantitative data.

This information can then be used to assess how the components of safety culture are integrated into day-to-day activities. This information is useful in assessing the overall safety culture as well as the safety culture of individual functional groups.

Example checklist items:

Accountability

(Observed during ongoing work activities.)

Are the personnel who are performing the activities given specific success criteria that define organizational expectations before beginning the work? Yes ___ No ___ N/A____

If yes, nuclear safety was ___was not ___ among the expectations.

Is performance feedback timely, so that corrections in performance can be achieved?
Yes ___ No ___ N/A____

If yes, did any feedback concern nuclear safety? Yes ___ No ___ N/A____

Is performance feedback available from verbal communication ___ or performance evaluation reports generated at a later date ___?

If yes, did any feedback concern nuclear safety? Yes ___ No ___ N/A____

Did any supervisor offer performance feedback related to nuclear safety?
Yes ___ No ___N/A____

Did any manager offer performance feedback related to nuclear safety?
Yes ___ No ___N/A____

Did any peers offer performance feedback related to nuclear safety?
Yes ___ No ___N/A____

If it was necessary to deviate from the originally planned activities, did the personnel performing the activities have the authority to approve the deviation?
Yes ___ No ___ N/A____

If yes, did the deviation have nuclear safety implications? Yes ___ No ___ N/A____

If the work is being performed by a crew, is there an obvious structure to the group (i.e., there is a clearly identified group leader and specified roles and responsibilities for each of the other group members)? Yes ___ No ___N/A____

Were the personnel selected to perform the activities familiar with the task requirements or was there obvious uncertainty regarding the tasks to be performed ___?

(To be observed during meetings.)

Were the specific individuals responsible for implementing the initiative, project, or program under discussion present? Yes ___ No ___ N/A____

Was the individual given an opportunity to present discuss or defend his or her position?
Yes ___ No ___ N/A____

If the responsible individual was present, did s/he receive any feedback related to nuclear safety? Yes ___ No ___N/A____

If yes, was the feedback provided by (check all that apply):
___ Peers
___ Supervisor
___ Manager

If the responsible individual was present, did s/he receive any feedback related to deadlines, costs, quality or other performance criteria? Yes ___ No ___N/A____

If yes, was the feedback provided by (check all that apply):
___ Peers
___ Supervisor
___ Manager

Corrective action program (CAP)

(Typically observed during issue screening, management screening, or closure meetings)

Which of the following individuals participated in the meeting?
Corporate management ____
Senior management ____
Functional area management ____
Middle management ____
Licensee staff ____
Contractor ____
Other (describe)? ____

Were screening criteria used? Yes ____ No ____ N/A ____

Were the screening criteria conservatively applied for every issue?
Yes ____ No ____ N/A ____

Did anyone challenge how any of the criteria were being applied?
Yes ____ No ____ N/A ____

Did anyone challenge the prioritization of any issues?
Yes ____ No ____ N/A ____

Were any issues upgraded or downgraded in priority? Yes ____ No ____ N/A ____

Upgraded ____ Downgraded ____

If so, did anyone challenge the change?
Yes ____ No ____ N/A ____

Were issues thoroughly discussed? Yes ____ No ____ N/A ____

Was safety, as applicable, considered for every issue? Yes ____ No ____ N/A ____

Were there any issues where it was decided not enough information was available to make the prioritization? Yes ____ No ____ N/A ____

If so, were any individuals directly involved with the issue consulted or plans made to consult the individuals involved? Yes ____ No ____ N/A ____

Did the reviewers have an understanding of the evaluation (i.e., they reviewed the evaluation prior to the meeting)? Yes ____ No ____ N/A ____
Did the reviewers place safety as the highest priority? Yes ____ No ____ N/A ____

Was there any discussion about the scope of the evaluation (i.e., what areas the evaluation covered)? Yes ____ No ____ N/A ____

What about depth (i.e., how thorough/in-depth the issue was investigated)?
Yes ____ No ____ N/A ____

Did any reviewer raise any concerns about problems not being adequately investigated in the evaluation?
Yes ____ No ____ N/A ____

Was there any discussion on if the corrective action(s) presented could resolve all the problems identified in the evaluation?
Yes ____ No ____ N/A ____

Did any reviewer interact with the evaluator(s) of the issue? Yes ____ No ____ N/A ____

If so, did the reviewer(s) behave at any point in a way that could potentially discourage the evaluator from performing a thorough/in-depth investigation in the future?
Yes ____ No ____ N/A ____

Were there any evaluations not accepted by the reviewers? Yes ____ No ____ N/A ____

Is yes, was resolution on what to do about the evaluation reached?
Yes ____ No ____ N/A ____

If yes, was it through consensus-seeking ____ or top-down direction from management ____?

If no, was it decided to push the decision up the management hierarchy ____ or not ____?

If it was determined that the evaluation should have any rework done:
Was guidance provided on how to improve the evaluation?
Yes ____ No ____ N/A ____

Were any additional resources (e.g., training, additional evaluators, management assistance) offered to the evaluator(s)?
Yes ____ No ____ N/A ____

Were there any concerns raised about the new deadline?
Yes ____ No ____ N/A ____

If yes, who raised the concern? Reviewer(s) ____ Evaluator(s) ____

Continuous Learning Environment

(When observing training.)

Is the training a result of an event or incident that occurred at the facility due to a human performance problem? Yes ___ No___N/A____

Do trainees appear hesitant to ask questions or seek clarification?
Yes ___ No___N/A____

Do trainees appear to be engaged? Yes ___ No ___N/A____

Do trainees have an opportunity to offer feedback about the training?
Yes ___ No ___N/A____

Are trainees evaluated at the completion of training?
Yes ___ No ___N/A ____

Are trainees provided with feedback while the training is ongoing?
Yes___ No ___ N/A____

Are lessons learned from internal or external operating experience incorporated into the training? Yes ___ No ___ N/A____

Is nuclear safety addressed during the training? Yes ___ No ___ N/A____

Decision-making (and Organizational Change Management, as applicable)

(May be observed in scheduled or informal meetings or during ongoing work activities.)

Did the decision involve technical ___, policy____, or personnel___ issues?

Were any uncertainties discussed? Yes ___ No ___ N/A____

Were alternatives generated____ or not ___?

Was "risk" or nuclear safety discussed? Yes ___ No___ N/A____

Were conservative assumptions used? Yes____No____N/A____

Were any alternatives rejected because of risk or nuclear safety considerations?
Yes ___ No ___ N/A

Was resolution reached ____ or not ___?

If resolution was reached, was it through consensus-seeking ___or top-down direction from management ____?

If resolution was not reached, was it decided to push the decision up the management hierarchy ___ or not ___?

If resolution was not reached, was it decided to seek more information ___ or not ___?

If nuclear safety was involved, was the decision based on sufficient evidence that it was safe to proceed? Yes____No____N/A____

If nuclear safety was involved, was the decision based on sufficient evidence that it was unsafe to proceed? Yes____No____N/A_____

If the decision concerned policies, rules, and goals, did the manager consult with his/her immediate subordinates? Yes___ No___ N/A____

If the decision concerned staffing, did the manager consult with his/her immediate subordinates? Yes ___ No___ N/A____

If the decision concerned a technical issue, did the manager consult with any technical staff? Yes ____ No___ N/A____

If the decision concerned how to solve a work-related problem, did the individual consult his/her superior? Yes___ No ___ N/A____

Was a plan made for communicating the results of the decision? Yes___No ___ N/A____

If yes, was communicating with the affected individuals discussed?
Yes ___No ___ N/A____

If yes, was communicating with a higher management level discussed?
Yes ___No ___ N/A____

Were any previous, similar decisions discussed? Yes ___ No ___ N/A____

If yes, was the effectiveness of the previous decision discussed?
Yes ___ No___ N/A____

Environment for Raising Concerns

(Observed during any interactions among site personnel.)

Did a subordinate(s) ask any questions of a superior during the interaction?
Yes ___ No ___ N/A____

If yes, did the superior answer the question(s)? Yes ___ No ___ N/A____

Did a subordinate(s) raise any concerns to a superior during the interaction?
Yes ___ No ___ N/A____

If yes, did the concerns involve (check all that apply):
___nuclear safety
___radiological or industrial safety
___resources (e.g., staff, expertise)
___scheduling or deadlines
___other

If yes, did the superior address the concerns? Yes ___ No ___ N/A____

If yes, did the superior resolve the concerns? Yes ___ No ___ N/A____

If yes, was the supervisor's response open and non-defensive?
Yes ___ No ___ N/A____

Did a subordinate offer any suggestions to a superior during the interaction?
Yes ___ No ___ N/A____

If yes, did the superior discuss the suggestion(s)? Yes ___ No ___ N/A____

Was the interaction obviously strained ___, obviously pleasant ___, or was there no apparent affect ___?

Was the interaction related to a safety issue ___, regulatory requirement(s) ___, production issue(s) ___, personal conflict ___, other ___?

Did the interaction include discussion of ways to improve the facility performance?
Yes ___ No ___ N/A____

Did the interaction include discussion of ways to improve personnel performance?
Yes ___ No ___ N/A____

Did any staff member self-report an error? Yes____No___ N/A____

If yes, did peers react favorably? Yes____ No____N/A____

If yes, did supervisor(s) react favorably? Yes____No___ N/A____

Preventing and Detecting Retaliation

(Observed during management or oversight meetings.)

Was there a rigorous investigation of the potential issue? Yes____ No____ N/A____

Did the disposition seem appropriate? Yes____No_____N/A____

Was the potential for the action to discourage the reporting of concerns discussed?
Yes____No_____N/A____

If yes, mitigation actions were____were not____assigned.

Resources

(Observed during ongoing work activities. See also procedures-related items in Work Practices.)

Did personnel have problems reading the work package (legibility)?
Yes ___ No___ N/A____

Did personnel have problems interpreting the information in the work package?
Yes ___ No___ N/A____

Was any information missing from the work package? Yes ___ No___ N/A____

Were an adequate number of staff available to perform the work?
Yes ___ No___ N/A____

Were the procedures adequate to perform the work? Yes ___ No___ N/A____

Did personnel have the equipment necessary to perform the work safely?
Yes ___ No___ N/A____

Safety Policies

(Typically observed in scheduled meetings.)

Was nuclear safety discussed as a goal? Yes ___ No ___ N/A____

Were goals other than nuclear safety discussed? Yes ___ No ___ N/A____

Goals were ___ were not ___ prioritized?

Nuclear safety was ___ was not___ assigned the highest priority.

Were any target levels attached to the goals? Yes ___ No ___ N/A____

If goals were being set on a departmental level, were overall organizational goals factored in? Yes ___ No ___ N/A____

If yes, nuclear safety was ___ was not ___ one of the goals.

If goals were being set on an organizational level, were corporate goals factored in?
Yes ___ No ___ N/A____

If yes, nuclear safety was ___ was not ___ one of the goals.

Was there overall agreement among the individuals setting the goals on what the goals and priorities should be? Yes ___ No___ N/A____

Was there any indication that the goals of different departments were in conflict?
Yes ___ No ___ N/A____

If nuclear safety goals were discussed, the following individuals brought them up:
___ Corporate management
___ Senior management
___ Functional area management
___ Middle management
___ Licensee staff
___Contractor
___Other (describe)

If production goals were discussed, was the potential impact on nuclear safety mentioned?
Yes ___ No ___ N/A____

Work Control

(Observed during ongoing work activities or a work planning session.)

When planning a work activity, were the following issues discussed (check all that apply)?

___risk insights
___defense in depth
___job site conditions that could impact human performance
___task sequencing to optimize system availability
___potential impacts on nuclear safety of performing the activity at the same time as other activities are performed

___contingencies
___compensatory actions
___conditions under which the work would need to stop for nuclear safety reasons
___the impact on nuclear safety of any temporary modifications to be installed
___the impact on human performance of any operator work-arounds to be created
___any relevant internal or external operating experience

A pre-job briefing was ___ was not___ conducted. If it was conducted, were the following issues discussed (check all that apply)?

___risk insights and/or nuclear safety considerations
___defense in depth
___job site conditions that could impact human performance and means to mitigate their potential effects
___contingencies for mitigating the effects of mistakes and/or possible worst-case scenarios
___procedure usage requirements
___other work activities that have the potential to interact with this one
___conditions under which work would be stopped for safety reasons
___communications requirements
___applicable lessons learned from internal or external operating experience

When performing a work activity simultaneously with other work activities that had the potential to interact, communications were ___ were not___maintained between the individuals/groups performing the different activities.

When performing the work activity, unexpected conditions did ___ did not___ arise.

Work Practices

(Observed during ongoing work activities.)

Are there obvious time pressures for work completion? Yes ___ No ___N/A____

If obvious time pressures exist:

Do they appear reasonable given the activities to be performed?
Yes ___ No ___N/A____

Is there evidence that those pressures compromised the quality of the work performed in any way? Yes ___ No ___N/A____

Is there evidence that those pressures compromised the safety of the work performed in any way? Yes ___ No ___N/A____

Were time constraints for the work activities clearly communicated to all individuals involved in the activity? Yes ___ No ___N/A____

The reason for the time constraints is related to (check all that apply):
___nuclear safety concerns
___limited personnel resources
___other scheduled work activities
___pressure to get the facility back on-line
___other/unknown

Human error prevention techniques were ___ were not ___ used.

Human error prevention techniques were ___ were not ___ discussed during the pre-job brief.

Were procedures used in performing the activity? Yes ___ No ___N/A____

If procedures were used, were they conveniently located and easily accessible?
Yes ____ No ___N/A____

Verbatim compliance with the procedures was ___ was not ___ required.

If verbatim compliance was required, was it achieved? Yes ___ No ___N/A____
If verbatim compliance was not achieved,
(Note - these items relate to Resources.)

was it because the activities described by the procedure could not be performed as written, given the conditions (e.g., time constraints, personnel resources, unexpected conditions)? Yes ___ No ___N/A____

was it because the procedures not well understood or understandable?
Yes ___No ___N/A ____

The formal process for deviating from a procedure was ___ was not ___ followed.

Were any problems encountered during performance of the work activities?
Yes ___ No ___N/A____

If yes, did the problems have any nuclear safety implications?
Yes ___ No ___N/A____

Work was ___ was not ___ stopped until the problem was resolved.

If a management decision or additional expertise was required to solve the problem, were the necessary individuals made available within a reasonable time period?
Yes ___ No ___N/A____

Did any personnel point out *conditions* that could adversely impact nuclear safety?
Yes ___ No___ N/A____

Did any personnel point out *behaviors* that could adversely impact nuclear safety?
Yes ___ No___ N/A____

Were any work-arounds used? Yes ___ No___ N/A____

If yes, was the work-around long-standing ___or created for the current work activity___?

Was it proceduralized? Yes ___ No___ N/A____

If the work activity was considered critical, was management present?
Yes ___ No___ N/A____

If yes, did management offer direction ___ or feedback ___ ?

Was the direction or feedback related to nuclear safety? Yes ___ No___ N/A__