SAFETY CULTURE ATTRIBUTES TABLE

In support of the NRC's strategic mission to ensure public health and safety and to address lessons learned from recent event at licensee facilities, the Commission directed staff to undertake a number of activities to enhance the Reactor Oversight Process (ROP) to better address safety culture. As an initial step, the Safety Culture Working Group developed a Safety Culture Attributes Table (Table). The Working Group's approach in developing the Table utilized the ROP's hierarchical cornerstone framework as a model. Further the Working Group's approach in developing the Table as well as other activities was supportive of the regulatory principles of being objective, risk-informed, understandable, and predictable. The Table is comprised of four "Safety Culture Attributes" and 15 "Safety Culture Elements." The Working Group believes that each of these elements are important relative to a licensee's safety culture. The Safety Culture Attributes and Safety Culture Elements were identified by the Working Group after conducting a review of national and international sources from within and outside of the nuclear industry. Overall, the Safety Culture Elements comprise a mix of organizational values, behaviors, and associated plant programs and processes.

Also contained in the Table are illustrative examples of qualitative and quantitative performance information that are associated with each Safety Culture Element. The qualitative performance information is identified in the third column of the Table as, "Potential Safety Culture Inspection Information." The quantitative measures are identified in the fourth column of the Table as, "Potential Safety Culture Measures." Both the inspection information and the measures are associated with the Safety Culture Element, however, the measure may or may not be associated with a specific inspection information entry.

Due to the uniqueness of site specific programs, the difficulty that would exist in developing universal or site specific thresholds, and the potential for data manipulation, the Safety Culture Measures are not intended to be performance indicators analogous to those currently used in the ROP, but rather, are meant to be data that could be used by inspectors as part of their inspections into associated areas, in order to highlight areas of potential concern for additional review.

Following the public meeting, the Working Group will seek input on potential inspection information and potential measures for the Table, from inspection staff and Stakeholders. The Table will be modified to reflect this input. The Table's entries in these two columns will then be reviewed based on screening criteria and the resultant entries will be assessed against the cross-cutting areas and the ROP inspection procedures to determine what is available in the ROP and what isn't available but could potentially be included.

In reviewing the Table, please note that the Table is a work in progress and does not at this time reflect the Working Group's thinking with regard to what specific Safety Culture Elements should be inspected. The Table at this point reflects those items thought to be important to a licensee's safety culture. Please also note that, in the Working Group's view, not any one Safety Culture Element or one specific inspection information entry or measure is sufficient to reach broad conclusions regarding a licensee's safety culture, but collectively they could provide useful information to pursue relative to safety culture.

Safety Culture Attribute	**Safety Culture Element**	**Potential Safety Culture Inspection Information**	**Potential Safety Culture Measure**
An inherent characteristic, quality, or property that is critical to a licensee's safety culture.	A specific factor, process, or process outcome that can either be inspected or measured and that can be used to assess a licensee's performance with respect to the Safety Culture Attribute(s).	Qualitative information that is acquired from an inspection to assess change or performance of a Safety Culture Element.	Quantifiable information that is acquired through an inspection (e.g., that can be counted, trended or noted) which can be used to assess change or performance of a Safety Culture Element.
Safety Conscious Work Environment (SCWE)	Organizational responsibility for SCWE	Status of SCWE is monitored using appropriate performance measures and actions are taken in response to negative findings	
		Employee Concerns Program (ECP) is effectively implemented (e.g. confidential, accessible, appeal process, timely, appropriate resolution)	Trend in the number or type of NRC allegations/number or type of ECP concerns
			Percentage of anonymous ECP submittals
	Personnel responsibility for SCWE	Management ensures employees understand their responsibility to raise issues, challenge unsafe acts, participate in resolution of issues, and clearly communicate issues to management	Percentage of personnel who have received initial SCWE training

Safety Culture Attribute	Safety Culture Element	Potential Safety Culture Inspection Information	Potential Safety Culture Measure
	Questioning attitude	Management actions and communication encourage challenging unsafe acts, voicing dissenting views, raising safety issues, and reporting anomalies	Annual total number of NRC allegations
		Personnel at all levels of the organization are aware of zero tolerance for retaliation	Annual number of NRC allegations of chilling effect
Organizational learning & assessment	Operating experience (internal & external)		Ratio of industry OE reports evaluated versus total screened
		Searches of relevant OE are conducted when making significant modifications to procedures or equipment	
		Evaluations of OE are used to develop appropriate corrective actions which are implemented in a time frame commensurate with their safety significance	Annual number of reportable events or significant conditions adverse to quality attributed to inadequate action to previous OE reviews
	Self-assessment process	Self-assessments are of appropriate scope (e.g. identify latent conditions), are self-critical, and appropriate actions are taken	Annual number of repeat findings in self-assessments
		Periodic assessments are conducted to evaluate the effectiveness of internal and external oversight groups	

Safety Culture Attribute	Safety Culture Element	Potential Safety Culture Inspection Information	Potential Safety Culture Measure
	Problem identification & resolution/corrective action program	Complete and accurate identification of the problem in a timely manner commensurate with its significance and ease of discovery	Percentage of self-identified SCAQs and CAQs versus those that are self-revealing or identified by an external organization
		Classification and prioritization of the resolution of the problem commensurate with its actual or potential safety significance	
		Management appropriately challenges the effectiveness of root cause evaluations (e.g. Corrective Action Review Board (CARB), Plant Operating Review Committee (PORC)	
			Average time for completing corrective actions for SCAQs and CAQs
	Continuous learning environment	Site training program incorporates new and emerging issues	
		A process for knowledge transfer exists for the transfer of critical information and decision making	
			Percentage of operators who fail requalification examination

Safety Culture Attribute	Safety Culture Element	Potential Safety Culture Inspection Information	Potential Safety Culture Measure
	Benchmarking	The results of benchmarking activities are evaluated and specific recommendations are developed, implemented, and communicated	Number of improvements implemented per benchmarking activity
Work Planning and Human Performance	Work control		Number of preventive maintenance deferrals
			Percentage of corrective maintenance versus preventive maintenance
		Work planning and coordination considers the sequencing of system availability and limits system unavailability	
		Work planning and coordination ensures personnel are qualified, have access to the right procedures and job aides, and have appropriate instructions (e.g. expected outcomes, job conditions, hold points, contingencies for work, and stop work criteria) and equipment	

Safety Culture Attribute	Safety Culture Element	Potential Safety Culture Inspection Information	Potential Safety Culture Measure
	Systematic decision making	Changes that are screened per 10CFR50.59 appropriately consider safety issues and are based on conservative assumptions	
		Steps are taken to ensure that sufficient design margins are maintained when making changes to plant equipment, procedures, and personnel	
			Number of NRC findings related to inadequate systematic decision making (e.g. operability evaluations, 50.59 evaluations)
		There is evidence of interdepartmental communication, coordination, cooperation, and decision-making at all levels of the organization (e.g. minimize conflict and enhance effectiveness of activities)	
	Conduct of work (including maintenance, operations, and engineering)	Procedure compliance is communicated to personnel; personnel understand which procedures require verbatim compliance, and such procedures are appropriately followed	Percent of condition reports that are associated with personnel not following procedures

Safety Culture Attribute	Safety Culture Element	Potential Safety Culture Inspection Information	Potential Safety Culture Measure
		Human performance is closely monitored and assessed, and significant human performance issues are communicated to station personnel	Trend of human performance error rate
		Appropriate interfaces are maintained with offsite organizations (e.g. grid operators) that could impact nuclear station operations	
Organizational Safety Accountability	Safety policies	There is policy on commitment to safety over production with evidence that it is reinforced and communicated	
			Annual number of production over safety concerns raised to the NRC allegation program or the ECP
		Corporate and plant nuclear oversight groups perform effective assessments	
	Accountability and incentive programs	Managers are present during critical activities and demonstrate a proper safety focus	
		Incentive programs reward safety behaviors and achievements	
	Adequate resources	Adequate resources are provided to maintain plant calculations, drawings, FSARs, and other design and licensing basis documents	Engineering backlog trend (e.g. FSAR updates, etc.)

Safety Culture Attribute	Safety Culture Element	Potential Safety Culture Inspection Information	Potential Safety Culture Measure
		Working hours are within NRC guidelines	Annual number of approved deviations from the working hours guidance
	Organizational change management	Change process and basis of decisions for major organizational/resource changes are communicated to staff, as appropriate	
		There is a systematic process for evaluating the impact of organizational changes and evidence that the process is used	