

NUCLEAR SECURITY CULTURE SELF- ASSESSMENT TOOLS



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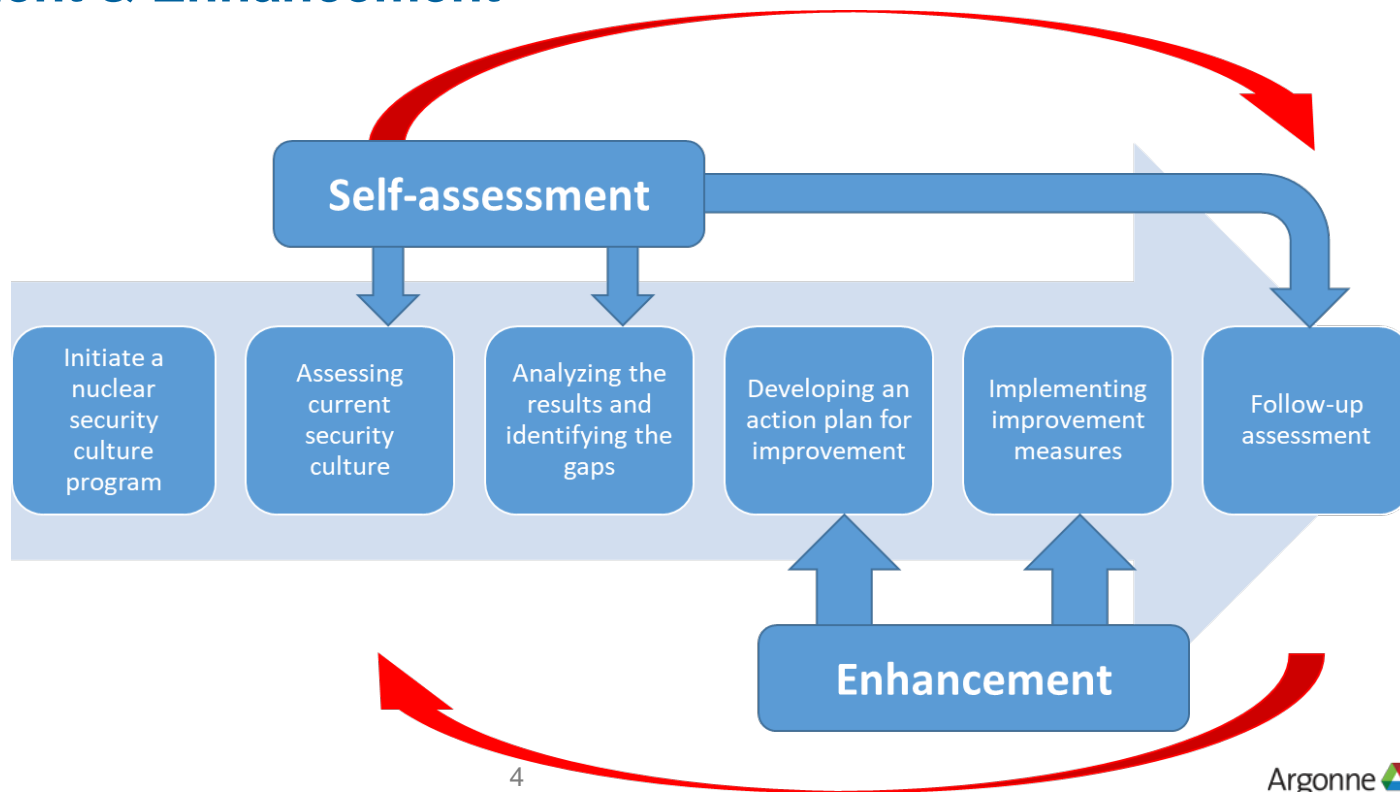
NUCLEAR SECURITY CULTURE ASSESSMENTS

- Purpose of Nuclear Security Culture (NSC) assessments is to identify
 - The current status of an organization's NSC
 - The strengths and weaknesses of said NSC
 - The organization's eventual goal regarding an NSC
- Qualitative/subjective assessment of the intangible human element
- Self-assessments help move the organization along a self-defined learning curve
 - For security staff
 - For staff of the entire organization

BENEFITS OF NSC SELF-ASSESSMENT

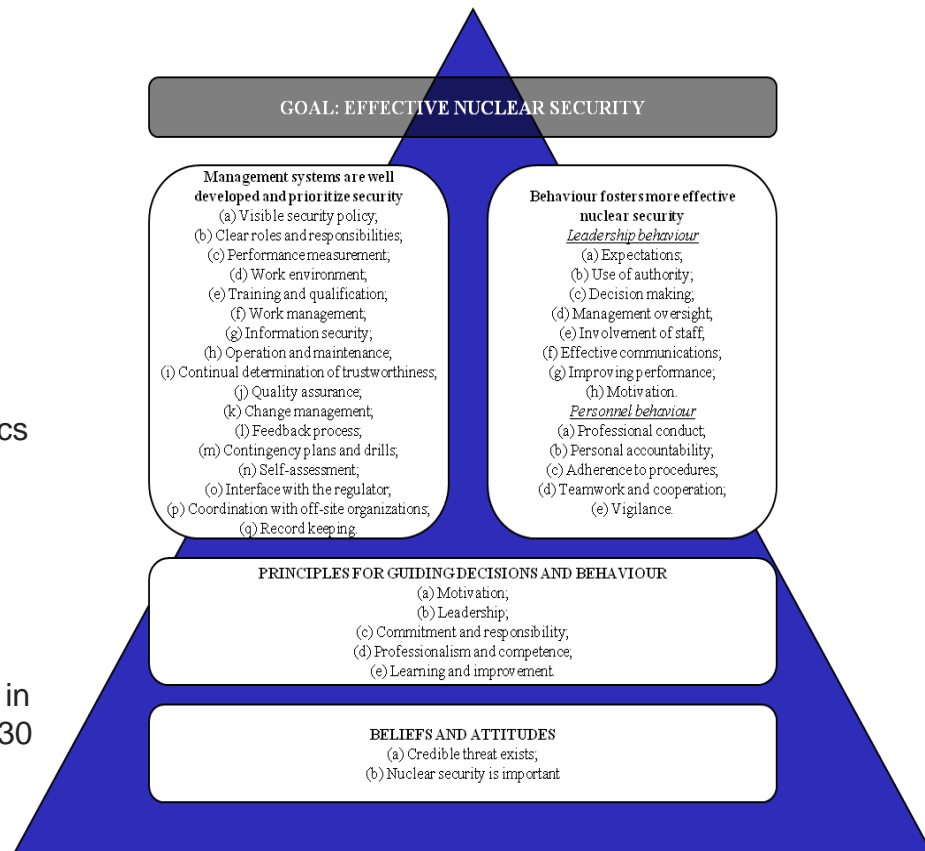
- An understanding of the human factor and NSC
- Clarification of employees' concerns, needs, aspirations, motives, and opinions about security-related topics
- Identification of barriers to and incentives for improvements to security performance
- Capacity to strengthen the overall organizational culture in areas like internal communication and human resource management
- Understanding of how to convey the importance of culture

NSC IMPROVEMENT MECHANISM: Self-Assessment & Enhancement



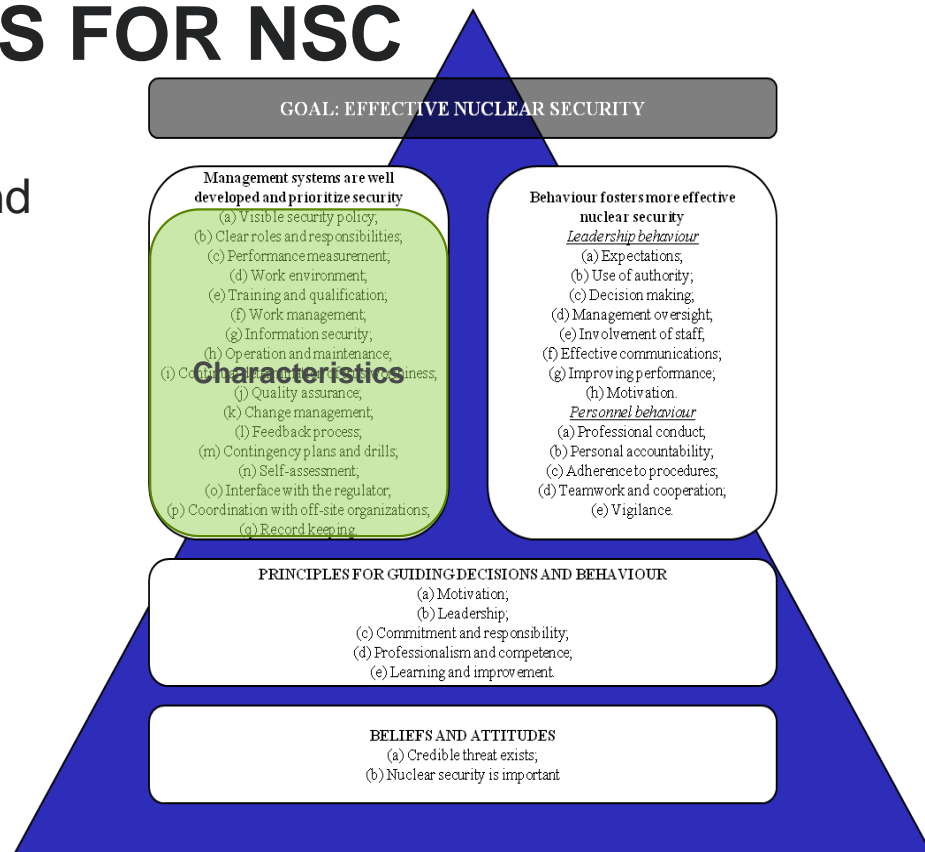
IAEA MODEL OF NSC

- Culture characteristics
 - Attributes necessary for a strong NSC
- Culture indicators
 - Descriptions of the meanings of the characteristics
 - Benchmarks to evaluate the status of the characteristics
- Implementing NSC across management systems and behaviors:
 - IAEA Implementing Guide on Nuclear Security Culture (2008): 120 indicators for 30 characteristics
 - Draft Technical Guidance on Self-Assessment of NSC in Facilities and Activities (NSS 28-T): 300 indicators for 30 characteristics



MANAGEMENT SYSTEMS FOR NSC

- Designed and introduced to promote and sustain an effective NSC

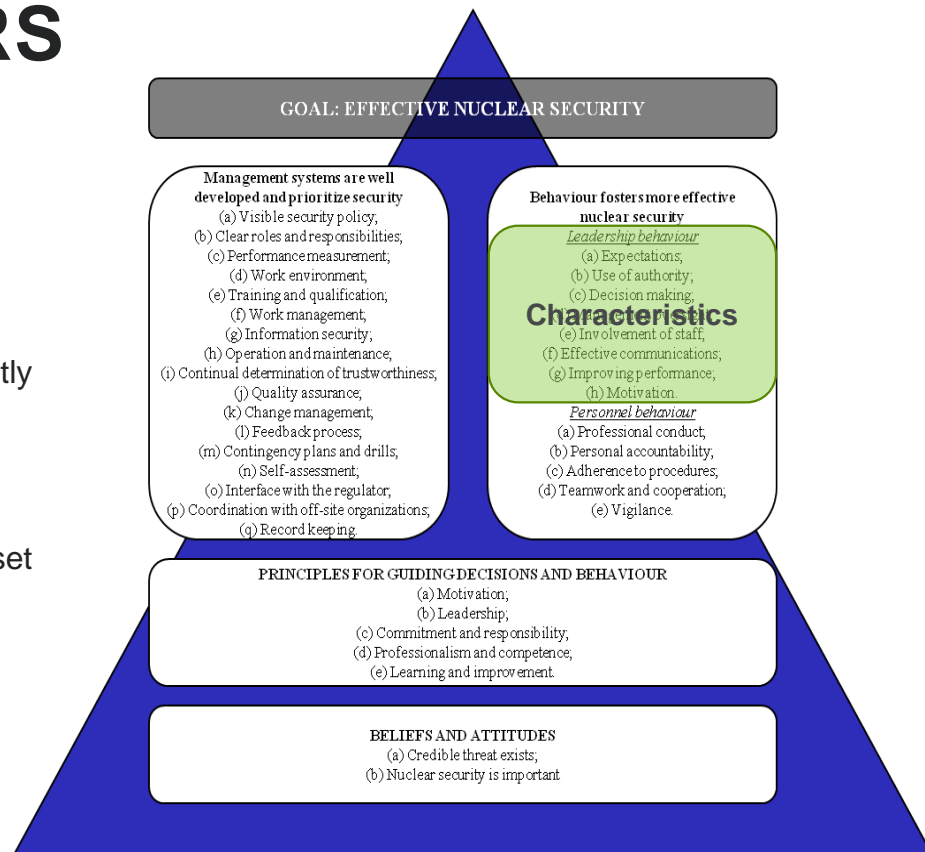


MANAGEMENT SYSTEMS FOR NSC

Characteristic	Indicators	
Visible security policy	<ul style="list-style-type: none"> Policy established, posted, and familiar to staff Security function respected within organization 	<ul style="list-style-type: none"> Code of conduct covers needs of nuclear security Ongoing training and awareness raising on code of conduct
Clear roles and responsibilities	<ul style="list-style-type: none"> Clearly defined roles and responsibilities for nuclear security positions Staff understands and is encouraged to seek clarification 	<ul style="list-style-type: none"> Roles adequately explained to new personnel Security procedures are easy to understand and follow
Training and qualification	<ul style="list-style-type: none"> Training and qualification standards documented, appropriate, and communicated Training time has high priority 	<ul style="list-style-type: none"> Periodic evaluations of training programs conducted and revised Training materials include good practices and lessons learned from security breaches
Information security	<ul style="list-style-type: none"> Classification and control measures documented Responsibilities assigned for classification and control Clear processes and protocols exist for information security 	<ul style="list-style-type: none"> Information is segregated, stored and managed Staff understand importance of controlling information Computer systems are maintained securely
Determination of staff trustworthiness	<ul style="list-style-type: none"> Screening matches risks, documented and periodic Screening processes followed rigorously, including unescorted temporary staff and visitors 	<ul style="list-style-type: none"> Failures are appropriately investigated and adjudicated Training in identifying high-risk behavior Insider threat mitigation program is in place and well coordinated
Self-assessment	<ul style="list-style-type: none"> Documented self-assessment plan Patterns and trends are identified and analyzed Human factors methodologies used in analysis 	<ul style="list-style-type: none"> Performances benchmarked against best practices Corrective action plans developed and tracked
Interface with regulator/law enforcement bodies	<ul style="list-style-type: none"> Security information is exchanged regularly and in a timely manner Lessons learned from offsite and onsite exercises incorporated in procedures 	<ul style="list-style-type: none"> Staff members viewed the regulatory role positively Regulatory interface roles are clearly defined

LEADERSHIP BEHAVIORS

- Senior managers are the leading advocates of security culture.
- They demonstrate in both words and actions their commitment to security.
- The message on security should be communicated frequently and consistently.
- A leader is a person who has influence on the thoughts, attitudes, and behavior of others.
- Leaders and managers throughout an organization should set an example for security
 - e.g., through their direct involvement in training and in oversight of important activities.
- Individuals generally emulate the behavior and values that their leaders personally demonstrate.

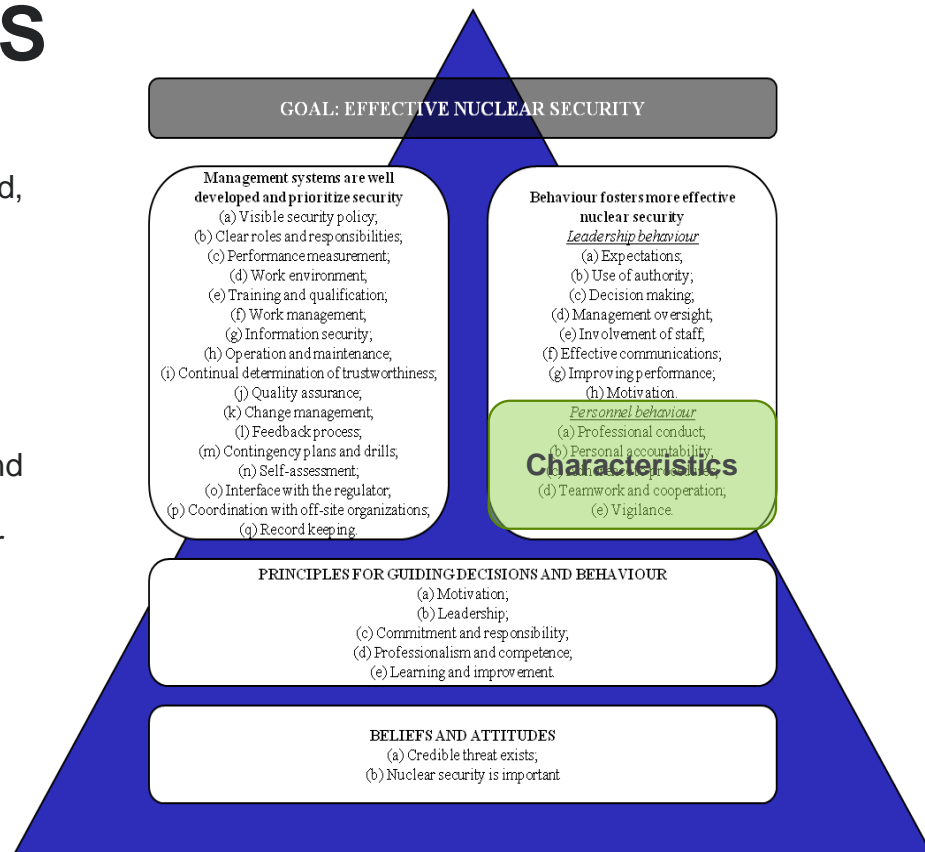


LEADERSHIP BEHAVIORS

Characteristic	Indicators
Expectations	<ul style="list-style-type: none"> • Specific expectations on nuclear security explicitly communicated by leadership • Resources are available to perform as expected • Demonstrate sense of urgency for corrections <ul style="list-style-type: none"> • Leading by example is expected from management (role modeling) • Constructive feedback from staff is encouraged and used to reinforce expected behavior
Use of authority	<ul style="list-style-type: none"> • Designated managers recognize and take charge when there are changes to vulnerability, security or threat • Leaders do not circumvent security by their authority <ul style="list-style-type: none"> • Managers are approachable, encourage communication and reward reporting concern or suspicions • Management hold people accountable for their behavior
Involvement of staff	<ul style="list-style-type: none"> • Management involve staff, when possible, in risk assessment and decision making processes • Encourage staff members to make suggestions and recognize them for contributions <ul style="list-style-type: none"> • Staff members report irregularities in the security regime in confidence because they know that questioning attitudes are encouraged
Effective communications	<ul style="list-style-type: none"> • Management ensure communication is valued and not blocked • Explain context for issues and decisions • Visit staff at work locations and talk with them <ul style="list-style-type: none"> • Welcome staff input, take action or explain why no action was taken • Keep staff informed on policy and organizational changes
Improved performance	<ul style="list-style-type: none"> • Staff members at all levels are encouraged to report problems and make suggestions • The cause of security events and adverse trends are identified and corrected <ul style="list-style-type: none"> • Analysis and follow-up of events consider not just the actual but also the potential consequences • When an error or event occurs, the question asked is "What went wrong?", not "Who was wrong?", with the focus on improvement, not blame
Motivation	<ul style="list-style-type: none"> • Managers encourage behavior observation and reporting to mitigate insider threat • Reward system recognizes contributions to nuclear security • Staff are aware of a system of rewards and sanctions <ul style="list-style-type: none"> • Annual performance appraisals include nuclear security issues • The principles used to reward good performance in security mirror those used to reward good performance in safety and operations

PERSONNEL BEHAVIORS

- All security barriers are designed, constructed, strengthened, breached or eroded by the action or inaction of individuals.
- Human factors are critical for security operation and they should not be separated from technical aspects
- Ultimately, effective security results from the interaction of individuals with technology and the organization.
- The objective of security-culture development by leaders and managers with the help of specially designed management systems is a set of desired standards of personnel behavior consistent with the people-technology-organization continuum.



PERSONNEL BEHAVIORS

Characteristic	Indicators
Professional conduct	<ul style="list-style-type: none"> All are familiar with organization's professional code of conduct and adhere to it Take professional pride in their work Help each other and interact with professional courtesy and respect Security is considered a respectable and career-enhancing profession for qualified personnel
Personal accountability	<ul style="list-style-type: none"> Staff understand how their tasks support nuclear security system Commitments are met or inability reported Behavior that reinforces security culture is encouraged by peers Staff takes responsibility to resolve issues Personnel accountability is clearly defined in appropriate policies and procedures
Adherence to procedures	<ul style="list-style-type: none"> All staff adhere to procedures, including information controls Visible sanctions are in place to encourage following procedures Staff members avoid shortcuts in implementing security procedures Staff members understand the potential consequences of noncompliance with established procedures
Teamwork and cooperation	<ul style="list-style-type: none"> Teams are recognized for contribution to nuclear security Staff interact with openness and trust and support each other Problems are solved by multilevel and multidisciplinary teams Teamwork are encouraged at all levels and across boundaries
Vigilance	<ul style="list-style-type: none"> Staff seek guidance when unsure of security significance of events or occurrences Staff are aware of a potential insider threat and its consequences Appropriate questioning attitude is encouraged Staff are attentive to detail Staff notice and question unusual signs and occurrences

ACHIEVING AN EFFECTIVE NSC

- Obtain the commitment of senior management.
- Build a common understanding of security culture.
- Describe the desired security culture.
- Assess the existing culture.
- Communicate the results of the assessment to all personnel.
- Identify gaps, root causes and key initiatives for improvements.
- Implement change.
- Ensure that the guiding principles of security culture become the accepted way of working.
- Sustain the culture change.
- Perform follow-up assessments.

SELF-ASSESSMENT TOOLS

- Surveys:
 - Provide a *general “snapshot”* of employee’s perceptions of the current state of security
- Interviews/Focus groups:
 - Specify group or class of employees to gain perceptions on specific topic to obtain *in-depth knowledge*
- Observations:
 - Passively obtain knowledge of unmeddled practices and procedures in real-time and in a casual setting
- Document reviews:
 - Understand stated procedures and protocols and for comparison with actual implementation

SURVEYS

- Surveys statements:

- Information drawn by statements are more focused than questions
- Should be made from and be directly connected to indicators of characteristics that have been decided to be important to the organization
- “How well do you agree with the following statement? (Circle one)”

Weakly								Strongly	
1	2	3	4	5	6	7	8	9	10

- Examples:

- Gauging leadership behavior:

Characteristic	Indicators	Survey Statements
Involvement of staff	Staff members report irregularities in the security regime in confidence because they know that questioning attitudes are encouraged	My staff are encouraged and comfortable to approach me with concerns and are ensured confidentiality if they desire.
Motivation	Annual performance appraisals include nuclear security issues	My staff is familiar with the reward system which recognizes contributions towards maintaining nuclear security.

- Gauging employee behavior:

Characteristic	Indicators	Survey Statements
Professional conduct	Staff help each other and interact with professional courtesy and respect	I am comfortable notifying my co-workers when I see they are doing something that may downgrade security, even though it is not part of my job.
Personal accountability	Personal accountability is clearly defined in appropriate policies and procedures	I know the relevant security expectations of me in my role.

INTERVIEWS

- Interviews allow for a greater flexibility in questioning with the possibility for follow-up questions, making it easier to get into the deeper meanings of culture.
- The self-assessment team's skills and experience will determine the extent to which interviews can be effectively used as a tool of cultural analysis.
- Based on the degree of structuring, face-to-face interviews can be divided into structured, semi-structured, and non-structured.
- The less structured, the more information can be obtained, but the higher skills are needed for interviewers.

FOCUS GROUPS

- Focus group method consists of in-depth discussion and dialogue between a small number of people under guidance of one or two facilitators.
- As an interactive method, focus group discussion can reveal information that is not apparent through more structured methods.
- Focus groups provide an opportunity to observe the culture in action:
 - Relational aspects of social dynamics.
 - Interpersonal behavior that are considered acceptable.
 - Diversity of feelings about an issue.
 - Patterns of self-expression.

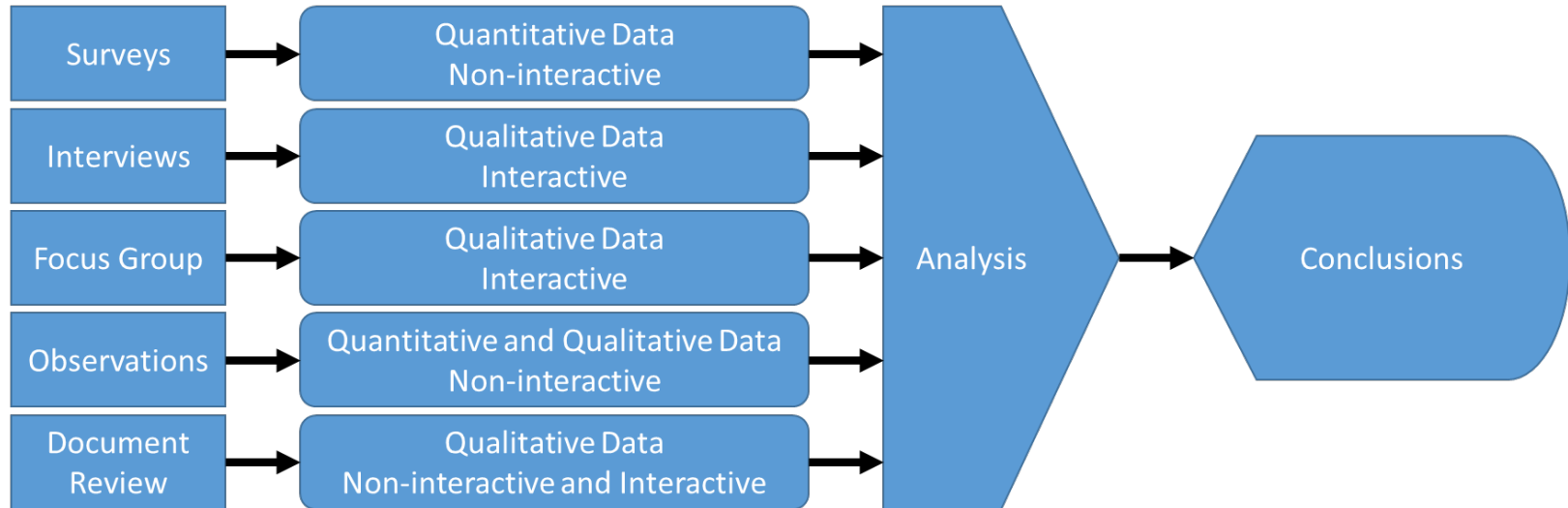
OBSERVATIONS

- Directly observe patterns of behavior:
 - How is the staff complying with procedures?
 - What behavior do staff members demonstrate with regard to security measures or in discussions on security matters?
 - Are they following established protocol always?
- Purpose:
 - To obtain knowledge on naturally-occurring behavior in real time
- Focus:
 - Work environment
 - Activities
 - Human interactions
 - Improvised activity
 - Nonverbal communication

DOCUMENT REVIEW

- The purpose of conducting a document review are as follows:
 - To collect background information as a general context for self-assessment.
 - To compare actual implementation with decisions and intention in reviewed documents.
 - To validate results obtained from other sources and facilitate self-assessment analysis.
 - To acquire factual data about issues under review.
- A labor intensive process
- Example sources:
 - Vision and mission statements, Policy statements on security.
 - Arrangements for security, including assignment of responsibilities.
 - Instructions for handling employee concerns including those for security

ANALYSIS → DRAWING CONCLUSIONS



- Culmination of self-assessment is the communication of results via a final document
 - Establishes a baseline for subsequent assessments
 - Provides framework of an action plan for improving NSC

EXAMPLE: NUCLEAR POWER STATION

- Initial assumptions:
 - Organization security measures are in place
 - Documented security rules
 - Personnel structure for reporting
 - Stated adherence to regulations
 - Technical security measures are in place
 - Physical protection systems
 - Access control systems
 - Cybersecurity systems
 - Previous safety events confirm human element as the weakest element of safety (and hence, assumed security) culture
 - Education is means of enhancing security



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EXAMPLE: NUCLEAR POWER STATION

- Survey Objectives:
 - Verify personal attitudes, opinions, and security perceptions
 - Explore beliefs, attitudes, and personal behavior through statements
 - Based on five personal personnel behaviors:
 - Professional conduct
 - Personal accountability
 - Adherence to procedures
 - Teamwork and cooperation
 - Vigilance

EXAMPLE: NUCLEAR POWER STATION

- Survey statements for personnel:

Characteristic	Survey Statements	Average Score
Professional conduct	• Security measures performed at our company are sufficient.	0.92
	• Security measures and control are essential to minimize the risk of a threat.	1.94
Personal accountability	• I understand the consequences (to our organization and to me personally) if I do not comply with the security rules.	1.70
	• Within my competence, I am personally responsible for security.	1.26
Adherence to procedures	• I abide by our established security measures (access control, transferring material, prohibition of filming, confidentiality of login data, etc.)	1.88
Teamwork and cooperation	• I always respect the security staff and follow their instructions.	1.69
Vigilance	• Security is a high priority in our company.	1.02
	• Threats to nuclear installations (e.g., terrorist attacks, sabotage, cyber attacks, misuse of sensitive information) exist.	1.03

Disagree	Rather Disagree	Not applicable/ No opinion	Rather Agree	Agree
-2	-1	0	+1	+2

EXAMPLE: NUCLEAR POWER STATION

- Lowest averaged scores led to follow-up *interviews* with randomly selected employees or a *focus group* of non-security personnel
- Example responses:
 - Security measures performed are sufficient [0.92]
 - “respondents have neither the knowledge nor the experience to assess whether the measures implemented are sufficient; but some consider them inefficient.”
 - Security is a high priority in our company [1.02]
 - “assumed priority of company is to minimize costs/maximize revenue”
 - “underestimating the reality of the threat: ‘we are not a target’”
 - “security is not my technical responsibility; it is carried out by (sometimes, outsourced) guard services”

EXAMPLE: NUCLEAR POWER STATION

- Analysis:
 - Who believes what?
 - How to address misconceptions/errors in judgment?
 - Can the organization do anything specifically?
- Conclusions:
 - Suggestive corrective actions include:
 - Enhanced educational material to include personal security measures
 - Strengthen quarterly/annual security refresher briefings
 - Acknowledgment of positive security practices
 - Follow-up self-assessment on annual basis

NSC ASSESSMENT: CONCLUSIONS

- NSC assessment is for comparing the current status of the existing culture with what is optimal or desired.
- Culture assessment is to understand reasons behind certain behaviors and what beliefs and attitudes are embedded in personnel's mind
 - This is different from an audit or physical protection assessment
- Self-assessment is an important learning tool as it provides an opportunity to gain an understanding of how culture influences security performance.

QUESTIONS?



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