

APPENDIX A – TREND CODES

TREND CODE		DESCRIPTION
A.	Management System: Management actions or methods (directing, monitoring, assessing, enforcing accountability, and corrective action) are inadequate or non-existent; resource allocation is inadequate; and supervisory oversight and change management practices are less than adequate (LTA).	
A.1	Organizational Standards, Policies or Administrative Controls (SPAC) NI/LTA	The organizational system/structure/culture failed to establish SPAC that can be implemented, followed and do not hinder performance. SPAC are missing or systemically not used throughout the organization.
A.2	Job performance standards LTA	The knowledge and skills required to perform the task or job were not identified or defined. Lack of defined standards for a specific job function resulted in ineffective performance.
A.3	Supervisory Levels NI/LTA	Insufficient supervisory resources to provide necessary supervision; supervision resource was less than that required by task analysis, considering the balance of procedures, supervision and training.
A.4	Supervisory Oversight LTA	The administrative load on immediate supervisor adversely affected his/her ability to supervise ongoing activities; too many administrative duties assigned to immediate supervisor.
A.5	Worker Selection is LTA	Staff or team selection was incorrect, inadequate or not qualified to perform the work/task. Insufficient number of trained or experienced workers assigned to task. The overall number of personnel assigned matched the planned man-hour allotment, but the organization methods failed to identify personnel with adequate experience or training to perform the work.
A.6	Accountability/Responsibility of Personnel NI	Accountability/responsibility of personnel was not well defined or personnel were not held accountable. Responsibility for work or process elements (procedures, engineering, training, etc.) or accountability for failures of work or process elements was not placed with individuals.
A.7	Corrective Action LTA	Corrective action for previously identified problem or event was not adequate to prevent recurrence.
A.8	Corrective Action Not Implemented/Implemented timely	Corrective action to a known or a recurring issue was not performed at or within the proper time; the response was untimely.
A.9	Corrective Action Not Used	Management failed to take meaningful corrective action to address events.
A.10	Needed resource changes not approved / funded	Corrective actions for existing deficiencies were not approved or funded.
A.11	Change Management NI/LTA	Risks/consequences associated with change were not adequately reviewed/assessed to determine the adverse impact or increased risk prior to implementing the change; Changes to processes were not communicated to affected personnel effectively.
A.12	Procurement Control LTA	Inadequate control of changes to procurement

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		specifications or purchase orders; A fabricated item failed to meet requirements, an incorrect item was received, or product acceptance requirements failed to match design requirements or were otherwise unacceptable.
A.13	Vendor support of change NI/LTA	Management failed to adequately assess the ability of vendors to supply products or services in support of changing expectations for a particular objective.
B.	Policy /Procedure/Instruction: Institutional policies, procedures and work instruction to communicate standardized work practices, processes and rules to minimize errors/risks and establish management's expectations for how work is performed.	
B.1	Policies/Procedures/Instructions Enforcement LTA	Personnel exhibit a lack of understanding or acceptance of policies/procedures/instructions and/or expectations; or policy/procedures/instructions/expectations are not established or not enforced.
B.2	Policies/Procedures/Instructions Not Used	Policy, procedure or other written instruction exists, but was not used, not followed or intentionally followed incorrectly.
B.3	Policies/Procedures/Instructions Used Incorrectly	Policy, procedure or other written instruction was used, but was mistakenly followed or used for an incorrect activity.
B.4	Policies/Procedures/Instructions Needs Improvement (NI)	Policy, procedure or other written instruction was incorrect, lacked adequate information, was not strict enough to prevent errors, contained confusing or conflicting information, was difficult to follow due to formatting; or no policy, procedure or other written instruction exist.
B.5	Checklist LTA	The checklist was confusing, inconsistent or conflicting; steps did not clearly indicate what was required or were missing; or checklist impossible to follow as written.
C.	Training: An event or condition can be traced to a lack of training or insufficient training to enable a person to perform a desired activity/process or task adequately.	
C.1	Training Program non-existent/NI/LTA	Organizational training program is not offered or is inadequate in providing the necessary knowledge and skills development for staff to successfully complete a task/perform work.
C.2	Training objectives LTA	Training objectives were incomplete or insufficient in covering all of the requirements necessary to successfully complete the task; the objectives were not written to accurately represent the task analysis; job/task analyses were inadequate or incorrectly identified the knowledge and skills necessary to complete the task.
C.3	Training Content NI/LTA	The training content was inadequate; training materials did not adequately address new work methods; the lesson content did not address all the training objectives or contain all the information necessary to perform the task.
C.4	Training Methods LTA	The correct training setting was not used and/or had inadequate instructors and facilities; the proper setting in

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		which to train the operator was not identified or training updates were not performed.
C.5	Training requirements not identified	The training requirements had not been identified for a task, considered part of the employee’s proficiency requirements or defined for the job description, or had not adequately addressed performance standards for the job/task.
C.6	Decision not to train	The decision was made not to provide specific training on a task. Employees were not required to receive training. Work experience was considered a substitute for training.
C.7	Work incorrectly considered “skill-of-the-craft”	The work was not a “skill” that could be developed through job experience; the worker did not have the appropriate skill level to perform the task and no assurance was in place to validate that the worker had proper training prior to task assignment.
C.8	Practice or “hands-on” experience LTA	There was not enough practice (or hands-on) time allotted during training to demonstrate proficiency; the on-the-job training (OJT) did not provide opportunities to learn skills necessary to perform the job or the employee had not previously performed the task under direct supervision before performing the activity independently.
C.9	Testing LTA	Testing did not adequately measure/reflect the employee’s ability to perform the task/job or did not cover all the knowledge and skills necessary to do the job..
C.10	Refresher training LTA	The task was not identified for refresher training or continual training was not performed to keep employees equipped to perform tasks/job. The frequency of continuing training was insufficient to maintain employee proficiency.
C.11	Change-related training / retraining not performed or not adequate	New or revised training was not performed or was not adequate to meet the needs of the new process or changes to an existing process.
D.	Communication: Inadequate presentation or exchange of information occurred between people performing the work; lack of communication or communication was misunderstood or misinterpreted.	
D.1	Ambiguous instructions / requirements	The instructions in the written communication were unclear, uncertain, or interpretable in more than one way.
D.2	Facts wrong / requirements not correct	Specific information in the written communication was incorrect; written communication contained outdated requirements or did not reflect the current status of operations or the environment.
D.3	Information not accessible/available	The information was not readily available; copy of the written communication was not in a designated file or rack. A “master copy” of the written communication was not available for reproduction.

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D.4	Verification / repeat back not used	A communication error was caused by failure to repeat back a message to the sender for the purpose of verifying that the message was heard and understood correctly.
D.5	Communication between work groups LTA	Lack of communication between work groups (production, technical, or support) led to an adverse condition.
D.6	Shift communications LTA	Incorrect, incomplete or otherwise inadequate communication between workers during a shift or a shift change; detailed instructions and other important status information was not exchanged during turnover of responsibility.
D.7	Data/Information NI/LTA	Data or information used to perform work or make decisions was inaccurate, not available within a timely manner, or non-existent.
E.	Equipment/Software Design NI/LTA: Equipment and/or software code design caused the equipment or software to fail.	
E.1	Incorrect or inconsistent design output	The drawings and other specifications were incorrect; drawings and other design documents did not agree; or the final design output did not include all changes. Software/code was defective or inappropriate for the system.
E.2	Design / documentation not complete	The designs and other documentation for equipment were incomplete; Items were missing from the documentation; A complete baseline did not exist.
E.3	Design / documentation not up-to-date	Drawings and documents were not updated when changes were made; Documents/drawings did not reflect the current status.
E.4	Independent review of design / documentation non-existent or LTA	A required review was not performed on the design or was not performed by an independent reviewer; the review was inadequate in detecting issues/errors.
E.5	Testing of design / installation LTA	Testing was not included as part of the design acceptance process. The testing did not verify the operability of the design. Design parameters did not successfully pass all testing criteria.
E.6	Independent inspection of design / installation LTA	Independent Inspection attributes were not included in the design installation. Required Hold/Witness points were not verified by Quality Assurance (QA). Hold / witness points did not pass the acceptance criteria. Commercial Grade Material was not adequately dedicated and documented.
E.7	Acceptance of design / installation LTA	The customer had problems with acceptance of the design, testing, and/or verification.
F.	Equipment / Material Problem: Failure, malfunction, or deterioration of equipment, systems or parts, including instruments or material, resulted in an adverse event or condition.	

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F.1	Calibration for Instruments Less Than Adequate (LTA)	Calibrations did not include all the essential elements. Equipment as-found condition was less than adequate.
F.2	Material Control LTA	The problem was due to the inadequate handling, storage, packaging or shipping of materials or equipment. The shelf life for material was exceeded. Spare parts were inadequately stored. There was an error made in the labeling or marking.
F.3	Unauthorized Material Substitution	Incorrect materials or parts were substituted. Material or parts were substituted without authorization. The requirements specified no substitution.
F.4	Defective Or Failed Part	A part/instrument lacked an essential component necessary to perform its intended function; An item was not fabricated according to the requirements/specifications; manufactured improperly; was not adequate for the application; or a part or component performance degradation contributed to the failure of the equipment or system.
G.	Non-Fault Tolerance System: a system, process or procedure that is designed where errors are undetectable or unrecoverable.	
G.1	Errors Not Detectable	The design prevented discovery of errors before an issue occurred; controls were ineffective in detecting a system failure due to error; or a serious error went unnoticed because there was no way to monitor system status.
G.2	Errors Not Recoverable	The system was designed such that personnel were unable to recover from error discovered before a failure occurred.
H.	Human Performance LTA: An event or condition resulting from the failure, malfunction, or deterioration of the human performance associated with the process.	
H.1	Step was omitted due to distraction	Attention was diverted to another issue during performance of the task and the individual committed an error in performance due to the distraction.
H.2	Incorrect performance due to mental lapse	The individual knew appropriate action(s) to take, but failed to initiate the correct action(s) based on inattention/over-attention.
H.3	Infrequently performed steps were performed incorrectly	The individual was not completely familiar with the tasks required based on not frequently performing the tasks and not operating at a fluency level.
H.4	Wrong action selected based on similarity with other actions	The individual selected a wrong action out of a series of actions that appeared to be the same, but are not.
H.5	Changes / Departure from Routine	The individual departed from a well-established routine, or unfamiliar or unforeseen task or job site conditions that potentially disturb an individual's understanding of a task or equipment status.
H.6	Complacency / Overconfidence	Self-satisfaction or overconfidence with a situation resulting in misjudging actual hazards or dangers; Underestimating the difficulty or complexity of a task based upon past experiences.

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H.7	Inaccurate Risk Perception	Personal appraisal of hazards and uncertainty based on either incomplete information or assumptions; Degree of risk-taking behavior based on individual's perception of possibility of error and understanding of consequences.
H.8	Deliberate violation	The action on the part of the individual was a deliberate action to commit human error. Caution: There is usually some form of personal gain associated with this action. Deliberate actions are cited in ~ < 5% of issues. If this trend code is identified in more than ~5% of the issues for a given facility, there most likely is some other underlying cause.
I.	Work Planning: Preparation for work was deficient or did not take place prior to the start of work.	
I.1	Work Preparation LTA	No work planning occurred for the task/job. Scheduling of the task did not adequately address the time frame required for workers to prepare the task; insufficient time allocated to adequately address known conditions or account for reasonable emergent issues; or the work package did not accurately reflect the work that was to be completed.
I.2	Work planning not coordinated with all departments involved in task	Interdepartmental communication pertaining to the task did not occur prior to initiating work, resulting in insufficient or non-existence teamwork and support of the work process.
J.	Work Processes/Packages: The work process and/or package was not developed or was deficient in successful completion of work; or did not accurately reflect the required work to be performed.	
J.1	Work Controls not implemented/NI/LTA	Job walkthrough, permit, pre-job briefing, tools, hazard assessment and/or other safety/administrative controls was/were non-existent or LTA.
J.2	Process/Task Design Deficiency	The process/task design, or a portion thereof, was deficient prior to being used.
J.3	Work Schedule NI/LTA	Errors occurred due to schedule conflicts, inadequate scheduling of work, and/or too much work scheduled for the allocated time or available staff.
J.4	Check of work was LTA	Quality check was not performed prior to proceeding to the next step in the process/procedure/job or completing work; Check of work did not catch/uncover errors/issues.
J.5	Ergonomics LTA	The worker was physically incapable of performing the required task, had difficulty reaching the equipment or assumed an awkward position to complete a task. Personnel mobility or vision was restricted or illumination levels were not sufficient for task performance.
K.	Maintenance: Maintenance program, including inspection and testing, was developed but was not used or the maintenance was inadequate.	
K.1	Preventive Maintenance For Equipment LTA	An equipment malfunction was caused by a failure to carry out scheduled preventive maintenance. Preventive maintenance was not established for the equipment or

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		component that failed. Preventive maintenance was scheduled too infrequently. The preventive maintenance was incomplete. Preventive maintenance was performed on some of the components but not on others.
K.2	Predictive Maintenance LTA	Predictive maintenance was not established for the equipment. The established frequency was inadequate to prevent or detect equipment degradation. The established method used to prevent or detect equipment degradation was inadequate.
K.3	Corrective Maintenance LTA	Corrective maintenance was performed but failed to correct the originating problem. The equipment or component was reassembled improperly during corrective maintenance. Other problems were noted during maintenance activities that were not corrected. The actual job of performing a maintenance activity was complete, but was not performed correctly.
K.4	Inspection / Testing LTA	Scheduled inspection/testing did not exist for the instrument or equipment; required testing / inspection was not established or performed for the equipment; the inspection/testing was inadequate or not performed as required; the inspection/testing did not include all the essential elements.
K.5	Start-Up Testing LTA	Functional testing did not exist for the equipment or system prior to placing them in service. Start-up testing was inadequate for the equipment or system being placed into service.
L.	Vendor Deficiency: Vendor performance NI or is LTA; Vendor internal assessment methods for detecting and correcting discrepancies is LTA; Vendor inability to supply products or services for a particular activity as agreed upon in contract; Vendor program, inspection and testing activities, or oversight methodologies are LTA.	
M.	Other: Using appropriate causal analyses, no cause can be reasonably determined. Adverse condition is a natural phenomenon.	