# SP001 Checklists

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# Purpose of Tank System Inspection

- The goal is to establish a regular inspection of the tank system to identify an issue before it creates a hazard so it can be addressed
- Inspection starts after installation is complete, this means the tank is properly commissioned (fire code) and then properly maintained (Inspection process like SP001)
- SP001 also covers portable containers
- SP001 is a minimum standard of inspections to establish the suitability for continued use of a storage tank system

# Who sets the inspection requirements for a storage tank system?

- Ultimately, the tank owner is responsible for complying with any regulatory requirements that apply to the tank
- It is incumbent on the person preparing the SPCC plan to establish the maintenance procedures for the tank system
- The maintenance program must be based on good engineering practice, there are choices
- The checklists we are discussing are part of SP001, a published AST maintenance standards
- Some states require tank inspection (NFPA 30 22.17)
- The checklists offered in SP001 are broad, and no one system has every element presented, so some customization may be needed
- Tank Record is part of checklists

# STI SP001 AST Record

Form completed by (Name) _____ Date _____

(Title) _____

| OWNER INFORMATION | FACILITY INFORMATION | INSTALLER INFORMATION |
|---|---|---|
| | | |
| Name | Name | Name |
| Number and Street | Number and Street | Number and Street |
| City, State, Zip Code | City, State, Zip Code | City, State, Zip Code |
| | Regulatory facility ID number (if applicable) | |

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| OWNER'S TANK ID | OTHER ID | INITIAL SERVICE DATE |
|---|---|---|
| Manufacturer: | Contents: | Construction Date: / Last Repair/Reconstruction Date: |
| Dimensions: | Capacity: | Last Change of Product Date: |
| Design: ☐ UL _____ ☐ SwRI _____ ☐ API _____ ☐ Other _____ ☐ Unknown<br>☐ Horizontal ☐ Vertical ☐ Rectangular | | |
| Construction: ☐ Bare Steel ☐ Cathodically Protected (Check one: A. ☐ Galvanic or B. ☐ Impressed Current) Date Installed: _____<br>☐ Coated Steel ☐ Concrete encased steel ☐ Stainless steel ☐ Other _____<br>☐ Double-Bottom ☐ Double-Wall ☐ Lined inside; Date lining installed: _____ | | |
| Spill control: ☐ Earthen Dike ☐ Steel Dike ☐ Concrete<br>☐ None ☐ Other _____ | CRDM: ☐ yes ☐ no<br>If yes, type: ☐ Release Prevention Barrier ☐ Elevated tank ☐ Double bottom tank<br>☐ Double wall tank ☐ CE-AST ☐ other _____ | |
| Tank elevated on supports ☐ yes ☐ no<br>Support material: ☐ steel ☐ concrete ☐ other _____ | | |
| Release Prevention Barrier: ☐ yes ☐ no If yes, Date Installed: _____<br>If yes, Type: ☐ concrete ☐ synthetic liner ☐ clay liner ☐ steel ☐ other _____ | AST Category: ☐ Category 1 ☐ Category 2 ☐ Category 3 | |



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|---|---|---|
| Manufacturer: | Contents: | Construction Date: / Last Repair/Reconstruction Date: |
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# SP001 Inspection Schedule (Table 5.5)

| Tank Size In Gallons | | Category 1 | Category 2 | Category 3 |
|---|---|---|---|---|
| Shop built tanks | 0 - 1100 | P | P | P, E&L(10) |
| | 1101 - 5,000 | P | P, E&L(10) | [P, E&L(5), I(10)] or [P, E(5) & L(2)] |
| | 5,001 - 30,000 | P, E(20) | [P, E(10)& I(20)] or [P, E(5) & L(10)] | [P, E&L(5), I(10)] or [P, E(5) & L(1)] |
| | 30,001 – 75,000 | P, E(20) | P, E&L(5), I(15) | P, E&L(5), I(10) |
| Field erected | | P, E(5), I(10) | P, E(5), I(10) | P, E(5), I(10) |
| Portable containers | | P | P | P ** |

# Categories for SP001 Tank Inspections

- Category 1
  - Spill Control
  - Release Detection Method (CRDM)
  - Overfill Prevention for Double Wall AST
- Category 2
  - Spill Control
- Category 3
  - No Spill Control

# SP001 Checklists

- The Checklists represent a regular evaluation of the tank system condition and performance of  proper maintenance of tank components
- Also to be used after severe weather event
- Inspections are focused on elements that often cause issues or whose failure can create safety issues
- An inspection is done monthly to help identify if any component is degrading due to use and exposure and to identify issues
- A more in depth annual inspection is done to help confirm functionality of certain key elements
- The checklists also create a record that allows someone to look back and see when an issue appeared
- There can be additional inspection obligations beyond the checklist

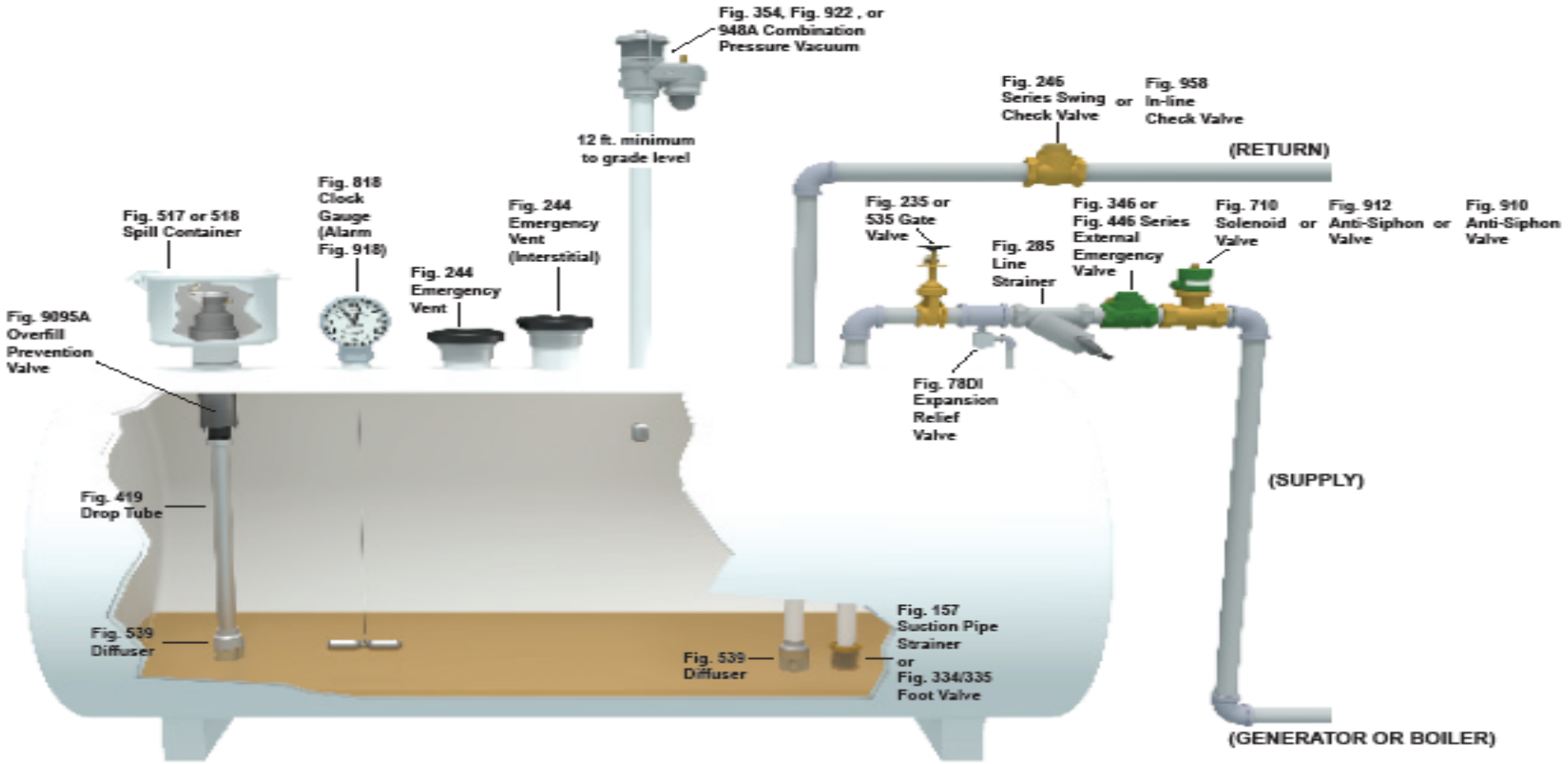
# Who can perform Checklist Inspections

- Qualifications are described in section 4.1 of SP001
- The tank owner is responsible for completion of checklists
- They can assign someone to do it
- The person who does it must have some knowledge of tank system Some training is likely in order (STI TIM program)
- The inspector must also be able to access the tank system to perform the necessary inspections

# What do the Checklists accomplish?

- They get someone out on a regular basis to look at the system
- They make sure the inspector is remined to check certain critical elements
- They make someone “own” the inspection
- Require that specified maintenance on appurtenances is performed
- The checklists create a record of what the inspector saw, and when
- If an issue is identified the tank owner must take action to address the issue identified

# Emergency Generator or Fuel Oil Suction System

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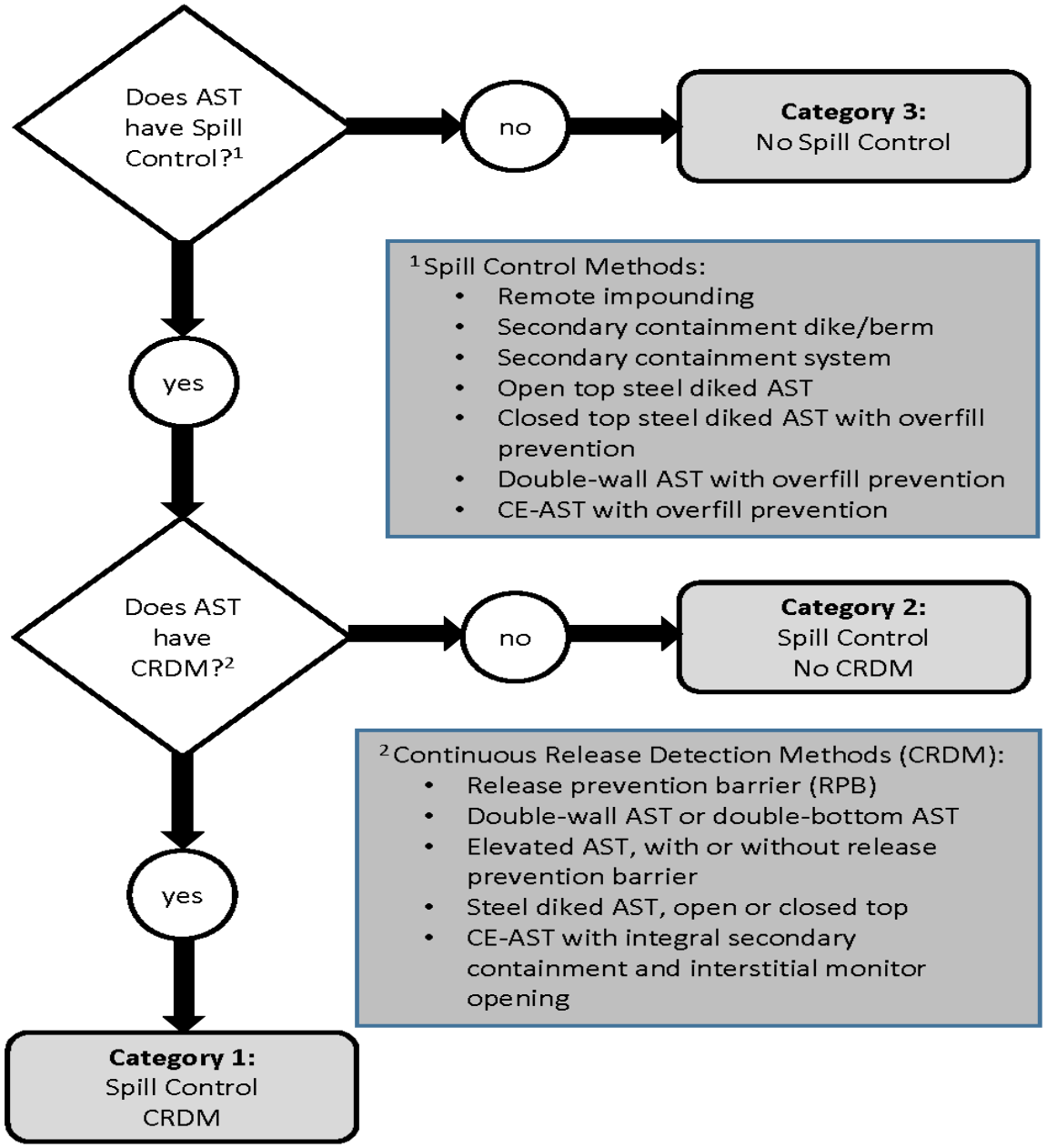
# General Changes that Occurred to Checklists

- The asterisk has returned, if a box with an asterisk is checked then action is required.
- The instructions are no longer called “Guidance”, it is not optional
- Identify that a finding that affect certain system elements can change the tank category
- These include elements associated with the CRDM, the Spill Control, and overfill prevention
- Some order was shuffled to group common items

# What is so important about Spill Control, overfill prevention and CRDM?



# Monthly AST Checklist

- Effort made to identify which items, if “No*” is checked, might affect tank category
- Establish that someone qualified must evaluate tank category if item that can affect category changes
- An item was added (#4) to check area around the tank for vegetation, build up of earth, refuse and look at tank foundation.

# STI SP001 Monthly Inspection Checklist

**General Inspection Information:**

Inspection Date: _____ Prior Inspection Date: _____ Retain until date: _____

Inspector Name (print): _____ Title: _____

Inspector's Signature _____

Tank(s) inspected ID _____

Regulatory facility name and ID number (if applicable) _____

- This checklist is intended as a model. Locally developed checklists are acceptable as long as they are equivalent and meet all applicable inspection checklist items. Inspections of multiple tanks may be captured on one form as long as the tanks are substantially the same.
- For equipment not included in this Standard, follow the manufacturer recommended inspection/testing schedules and procedures.
- The periodic AST Inspection is intended for monitoring the external AST condition and its containment structure. This visual inspection does not require a Certified Inspector. It shall be performed by an owner's inspector per paragraph 4.1.2 of the standard.
- Upon discovery of water in the primary tank, secondary containment area, interstice, or spill container, remove promptly or take other corrective action. Inspect the liquid for regulated products or other contaminants and dispose of properly.
- * designates an item in a non-conformance status. This indicates that action is required to address a problem. Note that some non-conforming items important to tank or containment integrity require evaluation by an engineer experienced in AST design, a Certified Inspector, or a tank manufacturer who will determine the corrective action. Note the non-conformance and corresponding corrective action in the comment section.
- If the inspection finds the integrity of the spill control system and/or the CRDM, such as items 13 and 14, is compromised the tank category and inspection time table should be re-evaluated by someone knowledgeable about the SP001 standard.
- Retain the completed checklists for at least 36 months.
- **After severe weather (snow, ice, wind storms) or maintenance (such as coating) that could affect the operation of critical components (normal and emergency vents, valves), an inspection of these components is required as soon as the equipment is safely accessible after the event.**

| | ITEM | STATUS | COMMENTS / DATE CORRECTED |
|---|---|---|---|
| | **Tank and Piping** | | |
| 1 | Is tank exterior (roof, shell, heads, bottom, connections, fittings, valves, etc.) free of visible leaks? **Note**: *If "No", identify tank and describe leak and actions taken.* | ☐ Yes ☐ No* | |
| 2 | Is the tank liquid level gauge legible and in good working condition? | ☐ Yes ☐ No* ☐ N/A | |
| 3 | Is the area around the tank (concrete surfaces, ground, containment, etc.) free of visible signs of leakage? | ☐ Yes ☐ No* | |

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| | | |
|---|---|---|
| 2 | Is the tank liquid level gauge legible and in good working condition? | ☐ Yes ☐ No* ☐ N/A |

# Annual AST Checklist

- A note is added that if a significant change in the system or containment then the party who prepared the SPCC plan should revisit the plan to make sure the plan is still appropriate for the system.
- Again, if a tank or a containment integrity issues are identified the status of the tank category identification should be evaluated
- Some items relocated to “Tank Manways and Piping” section, but the questions are generally the same
- Annual Inspections can involve working on equipment

# Portable Container Checklist

- Minimal changes
- It is noted that if a container does have an identified issue the container should be removed from service
- Inspector must recognize the life cycle of a portable container, they are not for fixed installation

# STI SP001 Portable Container Monthly Inspection Checklist

**General Inspection Information:**

Inspection Date: _____ Prior Inspection Date: _____ Retain until date: _____

Inspector Name (print): _____ Title: _____

Inspector's Signature (): _____

Container(s) inspected ID _____

Regulatory facility name and ID number (if applicable) _____

- This checklist is intended as a model. Locally developed checklists are acceptable as long as they are equivalent and meet all applicable inspection checklist items.
- This periodic Inspection is intended for monitoring the external condition and its containment structure. This visual inspection does not require a Certified Inspector. It shall be performed by an owner's inspector who is familiar with the site and can identify changes and developing problems.
- * designates an item in a non-conformance status. This indicates that action is required to address a problem. Note the non-conformance and corresponding corrective action in the comment section.
- Retain the completed checklists for at least 36 months.

| | Item | Area: | Area: | Area: | Area: |
|---|---|---|---|---|---|
| | **Portable Container Containment/Storage Area** | | | | |
| 1 | Are all portable container(s) within designated storage area? | ☐ Yes ☐ No* | ☐ Yes ☐ No* | ☐ Yes ☐ No* | ☐ Yes ☐ No* |
| 2 | Is the containment and storage area free of excess liquid, debris, cracks or fire hazards? | ☐ Yes ☐ No* | ☐ Yes ☐ No* | ☐ Yes ☐ No* | ☐ Yes ☐ No* |
| 3 | Are drain valves closed and in good working condition? | ☐ Yes ☐ No* ☐ N/A | ☐ Yes ☐ No* ☐ N/A | ☐ Yes ☐ No* ☐ N/A | ☐ Yes ☐ No* ☐ N/A |
| 4 | Are containment egress pathways clear and any gates/doors operable? | ☐ Yes ☐ No* ☐ N/A | ☐ Yes ☐ No* ☐ N/A | ☐ Yes ☐ No* ☐ N/A | ☐ Yes ☐ No* ☐ N/A |
| | **Container** | | | | |
| 5 | Is the container free of leaks?<br>Note: *If "No", discontinue use of container* | ☐ Yes ☐ No* | ☐ Yes ☐ No* | ☐ Yes ☐ No* | ☐ Yes ☐ No* |
| 6 | Is the container free of distortions, buckling, denting or bulging?<br>Note: *If "No", discontinue use of container* | ☐ Yes ☐ No* | ☐ Yes ☐ No* | ☐ Yes ☐ No* | ☐ Yes ☐ No* |

# Follow up on Inspection Results

- If items is identified that requires action there should be some follow up to address issue
- There should be documentation on what was done, a note, a workorder, a brief description of what was done
- If the AST inspector or SPCC engineer requires notification any reports generated should be kept
- Records retention is addressed in Section 11 of SP001, and in code
- STI inspector should look at periodic inspection reports as part of formal inspection

# The Takeaway for the Checklist Changes

- The checklist are not “optional” if SP001 is the selected maintenance option
- If an issue is identified that requires action it must be addressed promptly
- If the finding can address the tank category the tank owner must address the issue by fixing it, or adopting the schedule for the new tank category
- There should be documentation to show how an identified issue is resolved

# Where to get checklists

- If the SPCC plan sets the inspection procedure (it should) then use the form required by the SPCC plan
- If the AHJ specifies a form to be used, use that form for compliance with their code (The SPCC plan writer should have)
- The base checklist is part of SP001 and is included in Appendix C
- The checklists themselves can be found on the STI/SPFA website at: https://stispfa.org/resource/sti-sp001-annual-inspection-checklist/

# Questions?

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