

Overfill Protection for Storage Tanks in Petroleum Facilities

ANSI/API STANDARD 2350-2012
FOURTH EDITION, MAY 2012



AMERICAN PETROLEUM INSTITUTE



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Contents

	Page
1 Scope and Purpose	1
1.1 Scope	1
1.2 Purpose	1
1.3 Minimum Requirements	1
2 Normative References	1
3 Terms and Definitions	2
4 Overfill Prevention Process (OPP)	9
4.1 OPP Overview	9
4.2 Requirements for the Management System	10
4.3 Requirements for Risk Assessment	10
4.4 Defining Operating Parameters	11
4.5 Requirements for Overfill Protection Process (OPP) Procedures	19
5 Requirements for Equipment Systems	26
5.1 General Requirements for Overfill Prevention Systems Equipment	26
5.2 Alarm and Control Systems	28
5.3 Alarm Signals	28
5.4 Automated Overfill Prevention System (AOPS)	29
5.5 Automated Valves in OPS	29
5.6 Use of Uninterruptible Power Supplies (UPS)	30
Annex A (normative) Automated Overfill Prevention Systems (AOPS)	31
Annex B (informative) Management Systems	35
Annex C (informative) Liquid Level Instrumentation Considerations	37
Annex D (informative) Determining Tank Capacity and LOCs	39
Annex E (informative) Conceptual Tank Capacity Risk Evaluation	42
Bibliography	45
Figures	
1 Minimum Tank Levels of Concern (LOCs)	12
2 Tank Levels of Concern (LOCs) with Optional AOPS	13
3 Illustration of Categories Applied to Overfill Prevention Systems	17
B.1 The Management System Cycle	36
D.1 Tank Sensor Level and Fill Level Worksheet	40
D.2 Tank Critical High Level Work Sheet and Record	41
E.1 Conceptual Tank Overfill Risk Assessment Process	43
Tables	
1 Minimum High-High (HH) Response Time	15
2 Monitoring Product During Receipt	22
C.1 Commonly Used Types of Liquid Level Sensors	38

Introduction

This standard addresses overfill protection for petroleum storage tanks. It recognizes that prevention provides the most basic level of protection, thus while using both terms “protection” and “prevention”, the document emphasizes prevention. The standard's scope covers minimum overfill (and damage) prevention practices for aboveground storage tanks in petroleum facilities, including refineries, marketing terminals, bulk plants, and pipeline terminals that receive flammable and combustible liquids. It cannot cover every case and unique situation.

API Publication 2350, *Overfill Protection for Storage Tanks in Petroleum Facilities* was first issued in 1987. The second edition was rewritten and expanded with emergency spill prevention programs in mind. The third edition built on the second edition with the scope expanded to include Class I and Class II hydrocarbon liquids as well as tankage in broader usage. References to PEI 600 addressed potential overfills for receipts of petroleum products from wheeled vehicles.

The fourth edition continues to build on experience and new technology through the use of management systems. Since operations are the primary overfill prevention safeguard, new definitions and requirements are established for alarms. Risk reduction is also addressed by current practices and generally accepted industry practice.

During the development of the current and prior editions of this document, careful consideration was given to the benefits provided by overfill protection for tanks in petroleum facilities relative to:

- safety and environmental protection,
- optimization of the work place and operating practices,
- inspection, testing, and maintenance,
- equipment and system selection and installation,
- safe work practices, emergency procedures and training,
- management of change programs relative to tank overfill prevention,
- inclusion of current technology and practices related to process control and automated safety instrumented systems.

All of the sections and annexes in the document were revised with the 4th edition.

Illustrations are provided to help explain the tank capacity and level definitions. API Standard 2350 covers overfill protection only. Overfill protection includes concern for product overflow and tank damage. This standard does not address other issues related to aboveground storage tanks such as minimum operating levels.

The essential elements of this document are based on current industry safe operating practices and existing consensus standards. Federal, state, and local regulations or laws may contain additional requirements for tank overfill protection programs. For existing facilities the results of a risk-based analysis of aboveground atmospheric petroleum storage tanks may indicate the need for more protection against overfilling. In such cases some provisions from this standard may be suitable.

Overfill Protection for Storage Tanks in Petroleum Facilities

1 Scope and Purpose

1.1 Scope

The scope of this standard is intended for storage tanks associated with marketing, refining, pipeline and terminal containing Class I or Class II petroleum liquids. Use is recommended for Class III petroleum liquids. This standard does not apply to:

- underground storage tanks;
- aboveground tanks of 1320 US gallons (5000 liters) or less;
- aboveground tanks which comply with PEI 600;
- pressure vessels;
- tanks containing non-petroleum liquids;
- tanks storing LPG and LNG;
- tanks at service stations;
- tanks filled exclusively from wheeled vehicles (i.e. tank trucks or railroad tank cars); and
- tanks covered by OSHA 29 *CFR* 1910.119 and EPA 40 *CFR* 68 or similar regulations.

This standard recommends application of PEI Recommended Practice 600 Recommended Practices for *Overfill Prevention for Shop-Fabricated Aboveground Tanks* for overfill protection where applicable for aboveground tanks falling outside the scope of this document.

1.2 Purpose

The purpose of this standard is to assist owner/operators and operating personnel in the prevention of tank overfills by implementation of a comprehensive overfill prevention process (OPP). The goal is to receive product into the intended storage tank without overfill or loss of containment.

1.3 Minimum Requirements

This standard is one of minimum requirements. Alternate approaches or variations on the principles of this standard that provide equivalent or more robust overfill prevention are acceptable. Alternate approaches may be needed when the tank system varies from the typical configurations described in this standard. The rationale for the implementation of each overfill prevention process (OPP) should be documented and retained by the owner and operator.

2 Normative References

There are no references designated as normative for this document.

References included in various locations in the document and in the Bibliography are provided for information only and are not normative parts of this standard.