

# Safe Welding, Cutting, and Hot Work Practices in the Petroleum and Petrochemical Industries

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# Safe Welding, Cutting, and Hot Work Practices in the Petroleum and Petrochemical Industries

## 1 Introduction

### 1.1 Purpose

Gas and electric welding and cutting operations are important activities to support petroleum and petrochemical operations. Personnel engaged in these operations should have a thorough understanding of the duties they are to perform, and the potential hazards associated with the activity and materials involved. This recommended practice provides information to assist in the safe performance of welding, cutting, and other hot work activities to be done safely in petroleum and petrochemical operations. The understanding of potential hazards, and application of this knowledge, can help reduce the probability and severity of incidents and the risk of harmful health effects from those activities.

### 1.2 Scope

This recommended practice provides guidelines for safely conducting welding, cutting, and other hot work activities in refineries, gas plants, petrochemical plants, and other facilities in the petroleum and petrochemical industries. It includes specific guidance to evaluate procedures for certain types of work and equipment in service. Not included in the scope are:

- a) guidance for compliance with regulations or codes;
- b) hot tapping (it is the subject of API RP 2201);
- c) welding techniques, craft skills, or qualification of welders. While personnel doing welding and other hot work activities require a high degree of skill and should be qualified for that work, the qualification process falls outside the scope of this document. Additional guidance relating to welding equipment, techniques, processes, and testing used in the chemical, oil, gas, and pipeline industries is provided by API RP 582 and API 1104;
- d) normal "safe work" practices, such as fall protection, PPE, slip/trip/fall, etc., that are common to all similar industrial work activities;
- e) entry or work in inert environments (see RP 2217A).

The principles and resources provided in this document are widely applicable. Some activities (such as oil drilling or offshore operations) may be subject to specific regulations or unique work requirements that should be considered when developing welding and hot work programs.

API RP 2009 intends to maintain consistency and compatibility with ANSI/AWS Z49.1, which provides much more detail on welding equipment, PPE, and certain procedures, and NFPA 51B, which focuses on fires and explosions, with guidance covering a broad spectrum of applications, including structures.

### 1.3 Retroactivity

Any provisions in this publication related to procedures or design are intended for new project reference, such as revising procedures or designing new facilities, or when considering major revisions or expansions. It is not intended that any recommendations in this publication be applied retroactively to existing facilities or evaluation of prior practice. This recommended practice should provide useful guidance when there is a desire or need to review programs or facilities.