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IEEE Guide for Containment and Control of Oil Spills in Substations

IEEE Power and Energy Society

Sponsored by the
Substations Committee

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USA

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(Revision of
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IEEE Guide for Containment and Control of Oil Spills in Substations

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Abstract: The significance of oil-spillage regulations and their applicability to electric supply substations are discussed; the sources of oil spills are identified; typical designs and methods for dealing with oil containment and control of oil spills are discussed; and guidelines for preparation of a typical Spill Prevention Control and Countermeasures (SPCC) plan are provided. This guide excludes polychlorinated biphenyl (PCB) handling and disposal considerations.

Keywords: collecting pit, IEEE 980™, oil-containment methods, oil-containment system, oil discharge, oil spill, primary oil containment, retention pit, secondary oil containment, spill prevention control and countermeasures (SPCC) plan

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Introduction

This introduction is not part of IEEE Std 980-2013, IEEE Guide for Containment and Control of Oil Spills in Substations.

On December 31, 1973, the U.S. government published in its Code of Federal Regulations, under Title 40 Protection of Environment, the Federal requirements for the preparation and implementation of Spill Prevention Control and Countermeasure (SPCC) plans applicable to the discharge of oil at electrical facilities. While these regulations relate to oil spills into navigable waters, it should be realized that interpretation of navigable waters extends these regulations to cover many land-based areas.

It is prudent, therefore, to recognize that there exists a potential for oil spills in almost every substation throughout the utility industry. It is consequently reasonable to identify the extent of the problem, if any, and to recommend plausible measures to control oil spills by means of an IEEE guide.

This guide was revised by members of Working Group E2—Guide for Containment and Control of Oil Spills (IEEE Std 980)—and is under the sponsorship of the Transmission and Distribution Substations Operations Subcommittee of the IEEE Power and Energy Society (PES) Substations Committee.

Contents

IEEE Guide for Containment and Control of Oil Spills in Substations

1. Overview

1.1 Scope

This guide discusses the significance of oil spillage regulations in electric supply substations; identifies the sources of oil spills; discusses typical designs and methods for dealing with oil containment and control of oil spills; and provides guidelines for preparation of a typical spill prevention control and mitigation plan. This guide applies only to non-polychlorinated biphenyl (non-PCB) insulating oil.

It is not the intent of this guide to interpret governmental regulations or the applicability of the oil containment systems presented with respect to compliance to those regulations. Interpretation is left to each individual user.

1.2 Purpose

Containment, control, and mitigation of oil spills are a concern for owners and operators of electric supply substations. The environmental impact of oil spills and their mitigation is regulated by governmental agencies, necessitating increased attention in substations to the need for secondary oil containment. Beyond the threat to the environment, mitigation costs associated with oil spills continue to escalate, and the adverse community response to any spill is becoming increasingly unacceptable. This guide identifies some governmental regulations, the sources of oil spills, and typical methods and plans used to contain, control and mitigate them.