

CHEMICAL EMERGENCY PREVENTION & PLANNING BULLETIN



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- BULLETIN -

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REPORT

CHEMICAL or OIL SPILLS
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Editor's Note: The goal of part 68 — the Risk Management Program — is to prevent accidental releases of substances that can cause serious harm to the public and the environment from short-term exposures and to mitigate the severity of releases that do occur. You must prepare and implement procedures for maintaining the mechanical integrity of process equipment, and train your workers in the maintenance procedures. EPA Guidance can be found here: <http://www2.epa.gov/rmp/general-rmp-guidance-chapter-7-prevention-program-program-3>

Corrosion and Erosion

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Mechanical integrity is one of the biggest challenges for an effective process safety management program. Think about it – in your plant, there may be hundreds of vessels, thousands of feet of pipe, and hundreds of pumps, compressors, instruments, and other equipment. All of it must be kept in good operating condition to ensure safe, reliable, and profitable operation. Management of corrosion and erosion of process piping and equipment must be a major component of any effective mechanical integrity program.

The pictures show some examples of corrosion and erosion problems which were identified in plant inspections. (1) and (2) – external corrosion of pipes in a plant; (3) – close up of erosion damage to the face of a flange; (4) – close up of eroded body and seat of a gate valve; (5) – erosion damage on the body of a valve.



(5)



Do you know?

- Corrosion is the deterioration of metal by electrochemical reaction with substances or microbes in its environment. These substances can be process materials contained in a vessel, pipe, or other equipment, or materials in the outside environment – for example, water, salt, or contaminants in the atmosphere. The rusting of steel is an example of corrosion.
- Erosion Corrosion is the degradation of material surface due to mechanical action, often by impinging liquid, abrasion by a slurry, or particles, bubbles, or droplets suspended in fast flowing liquid or gas.
- Corrosion has been responsible for major losses in the process industries. For example, in 2006, part of a major oil field had to be shut down for several months because of multiple oil spills resulting from severe pipeline corrosion.

What can you do?

- Understand mechanical integrity programs in your plant, and your role in ensuring that these programs are effective.
- Observe pipes, vessels, and other equipment when you are working in the plant. Look for stains on the outside of insulated lines and other signs of damaged or corroded equipment. Follow up to make sure that repairs are made.
- If you are taking equipment or piping apart, look for evidence of corrosion damage – for example, corrosion under insulation, internal corrosion in pipes or other equipment, damage to flanges or valves.
- When replacing pipes, valves, or other equipment, be careful to use the same material of construction.
- Understand the corrosion and erosion corrosion properties of the materials in your plant, and what you must do to minimize corrosion problems.

Watch out for corrosion and keep the chemicals inside the equipment!

Where Do I Go For More Information?

RMP Materials EPA's Web site: <http://yosemite.epa.gov/R10/airpage.nsf/Enforcement/rmp> includes the Risk Management Program rule, Off-Site Consequence Analysis specific guidance and calculator, the list of regulated substances, fact sheets, guidance documents, industry-specific model plans, FAQs, the RMP*eSubmit Users' Manual, and other information.

EPA RMP Region 10

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EPA Region 10 RMP Website: <http://yosemite.epa.gov/R10/airpage.nsf/Enforcement/rmp>

Superfund, TRI, EPCRA, RMP & Oil Information Center - The information center can also answer questions related to Clean Air Act Section 112(r) and RMP reporting requirements. Contact the RCRA, Superfund, and EPCRA Call Center for your policy, regulatory compliance, and reporting requirements questions.

Call 800-424-9346 Toll Free or TDD 800-553-7672 Monday – Thursday: 10:00 AM – 3:00 PM Eastern Time Extended Hours of Operation (May, June and July): Monday – Friday: 9:00 AM – 5:00 PM Eastern Time (Closed Federal Holidays) <http://www.epa.gov/superfund/contacts/infocenter>

RMP*eSubmit Software Support - Contact the RMP Reporting Center for specific software questions about RMP*eSubmit. (703) 227-7650 (phone) Monday – Friday: 8:00 a.m. – 4:30 PM ET. Closed Federal Holidays. RMPC@epacdx.net

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This bulletin provides information on the EPA Risk Management Program, EPCRA, SPCC/FRP and other issues relating to Accidental Release Prevention Requirements. The articles contained herein are provided for general purposes only. EPA does not accept responsibility for any errors or omissions or results of any actions based upon this information. Please consult the applicable regulations when determining compliance. Mention of trade names, products, or services does not convey, and should not be interpreted as conveying official EPA approval, endorsement, or recommendation. The information should be used as a reference tool, not as a definitive source of compliance information. Compliance regulations are published in 40 CFR Part 68 for CAA Section 112(r) Risk Management Program, 40 CFR Part 355/370 for EPCRA, and 40 CFR Part 112.2 for SPCC/FRP.