



SHINE ER

Human Health

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Introduction

- ISG Section 19.4.8 describes the public and occupational health impacts from nonradioactive and radioactive sources
- Nonradiological impacts – Katrina Pitas
- Radiological impacts – Joe Johnson
- Radiological monitoring – Joe Johnson
 - Effluent monitoring
 - Environmental monitoring

4.8.1 Nonradiological Impacts



Introduction – Nonradiological Impacts

- Liquid, gaseous and solid chemical sources
 - Waste management and effluent control systems
 - Effluents released to the environment
 - Impact mitigation measures
- Physical occupational hazards and workforce exposure
- Summary

Significance Definitions

(from Part 51 Appendix B to Subpart A, footnote 3)

- **SMALL** – For the issue, environmental effects are not detectable or are so minor that they will neither destabilize nor noticeably alter any important attribute of the resource. For the purposes of assessing radiological impacts, the Commission has concluded that those impacts that do not exceed permissible levels in the Commission's regulations are considered small as the term is used in this table.
- **MODERATE** – For the issue, environmental effects are sufficient to alter noticeably, but not to destabilize, important attributes of the resource.
- **LARGE** – For the issue, environmental effects are clearly noticeable and are sufficient to destabilize important attributes of the resource.

Liquid Chemical Sources

- Process chemicals will include small (< 1000 lbs) quantities of:
 - Acids
 - Bases
 - Oxidizers
 - Flammables
- Greater than 1000 lb inventories of:
 - Nitric acid
 - Sulfuric acid
 - Barium or strontium nitrate
- Typical chemicals used in maintenance of an industrial facility

Liquid Chemical Impacts

- No point discharge to site
- No process wastes discharged to city sewer
- Other liquid wastes (e.g. sanitary) that are discharged to the city sewer system will meet Publicly Owned Treatment Works (POTW) requirements
- Treatment by the POTW ensures the impact to the public will be SMALL
- Stormwater runoff during operation and construction controlled by stormwater management plan in accordance with Wisconsin Department of Natural Resources (DNR) permits, ensuring impact to the public will be SMALL

Gaseous Chemical Sources and Impacts

- All process effluents are vented to the atmosphere through the main stack
- Total stack discharge
 - Flow rate – no greater than 140,000 standard ft³/min
 - Nonradiological contaminants
 - Nitrogen oxides (NO_x) < 6000 lb/yr
 - Sulfuric acid < 5 lb/yr
 - Volatile organic carbons (VOC) < 40 lb/yr
- Air emissions during construction controlled by dust management measures
- Permitting by Wisconsin DNR ensures impact on the public is SMALL
- Nonradiological gaseous effluent controls (if any) will be determined as part of the permitting process

Solid Chemical Sources and Impacts

- Expected nonradioactive solid wastes will be typical of an industrial facility of this approximate size
- Waste minimization plan will optimize processes to eliminate solid wastes where practical
- Recycling program will ensure recyclable wastes are sent to local recycling facilities
- Non-recyclable solid waste will be disposed of in dumpsters and trucked to local facility, other waste processed at permitted facilities
- Impacts to the public are SMALL

Physical Occupational Hazards and Workforce Exposure

- Physical occupational hazards to workers are minimized by compliance with OSHA regulations
- No highly hazardous chemicals in quantities above the Threshold Quantities as listed in Appendix A to 29 CFR 1910.119, therefore the requirements of Process Safety Management of Highly Hazardous Chemicals will not apply to the facility
- Worker exposure to air contaminants throughout the facility will be kept below the limits listed in 29 CFR 1910.1000
- Impacts on the workforce are SMALL

Summary

Nonradiological impacts are controlled and mitigated by:

- Dust control plans during construction
- Stormwater management plans during construction and operation
- Zero process liquid discharge facility
- Delivery of other wastewater to City of Janesville POTW
- Gaseous emission controls, if needed
- Waste reduction practices including recycling and waste minimization

Public and occupational health impacts from nonradioactive material are SMALL