

PROPOSED

COVERED SOURCE PERMIT REVIEW - PERMIT 0105-01b-C
Renewal Application 0105-09

Facility Title: Pearl Harbor Naval Shipyard in the Pearl Harbor Naval Complex (PHNC)
UTM: 609603 m East, 2361605 m North
Located at: Pearl Harbor, Oahu

Applicant: U.S. Navy, Pearl Harbor

Responsible Official: Captain Frank J. Camelio

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SICC: 373

Background:

The primary activities at the Naval Shipyard are the repair and maintenance of vessels and their associate equipment. Activities such as grinding, solvent cleaning, welding, soldering, brazing, sanding, sawing, coating operations, and fiberglass application are performed. Manufacturing activities include casting of metals and machining operations. Most of these activities were deemed insignificant. Permitted equipment include one electrolyte mixing tank, two paint spray booths, and shipbuilding and repair operations.

The Shipyard is not a major source, but is subject to NESHAP regulations because the Pearl Harbor Naval Complex (PHNC) is a major source for HAPs. These activities include in the permit are asbestos operations, radionuclide emissions, and ship building and repair operations.

This permit review is based on the application dated 11/23/94, its revisions dated 12/20/95, 11/6/96, 11/7/96, 2/14/97, 8/28/97, 9/4/98, and 12/3/98, the renewal application dated 11/24/03, and the additional information dated 6/23/05.

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Under this renewal, the following changes are being incorporated:

1. Permanent removal of two 9.87 MMBtu/hr boilers
2. Correcting the quantity of 3,500 gallon electrolyte mixing tanks from two to one.

Equipment:

1. One 3,500 gallon electrolyte mixing tank; and
2. Two paint spray rooms with Research Products Corp. 3000 series paint spray arrestors.

Air Pollution Controls:

Paint spray arrestors are installed in the paint spray booths. The filters of the arrestors have an overspray removal efficiency of 94 percent.

Applicable Requirements:

Hawaii Administrative Rules (HAR)

Chapter 11-59, Ambient Air Quality Standards

Chapter 11-60.1 Air Pollution Control

Subchapter 1 General Requirements

Subchapter 2 General Prohibitions

11-60.1-31 Applicability

Subchapter 5, Covered Sources

Subchapter 6, Fees for Covered Sources, Noncovered Sources, and Agricultural Burning

11-60.1-111 Definitions

11-60.1-112 General Fee Provisions for Covered Sources

11-60.1-113 Application Fees for Covered Sources

11-60.1-114 Annual Fees for Covered Sources

11-60.1-115 Basis of Annual Fees for Covered Sources

Subchapter 9, Hazardous Air Pollutant Sources

11-60.1-174 Maximum Achievable Control Technology Standards

Federal Regulations

40 CFR Part 61 - National Emission Standards for Hazardous Air Pollutants

Subpart A - General Provisions

Subpart M - National Emission Standards for Asbestos

Subpart I - National Emission Standards for Radionuclide Emissions from Federal
Facilities Other than Nuclear Regulatory Commission Licensees
and Not Covered by Subpart H

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40 CFR Part 63 - National Emission Standards For Hazardous Air Pollutants
Subpart A - General Provisions
Subpart II - NESHAP for Shipbuilding and Ship Repair Operations

CDS (Compliance Data System):

CDS is an inventory system for covered sources subject to annual inspections. CDS requirements apply because the facility is a covered source

Non-Applicable Requirements:

BACT (Best Available Control Technology):

A Best Available Control Technology (BACT) analysis is required for new or modified emission units if the net increase in pollutant emissions exceeds significant levels as defined in HAR §11-60.1-1. This is a renewal for an existing source with no proposed modifications. Therefore, a BACT analysis is not required.

CAM (Compliance Assurance Monitoring):

The purpose of Compliance Assurance Monitoring (CAM) is to provide a reasonable assurance that compliance is being achieved with large emissions units that rely on air pollution control device equipment to meet an emissions limit or standard. Pursuant to 40 Code of Federal Regulations, Part 64, for CAM to be applicable, the emissions unit must: (1) be located at a major source; (2) be subject to an emissions limit or standard; (3) use a control device to achieve compliance; (4) have potential pre-control emissions that are 100% of the major source level; and (5) not otherwise be exempt from CAM. CAM is not applicable because the paint spray booths and mixing tank are not subject to an emission limit or standard and the rest of the operations at the facility do not utilize any control devices to control emission.

CERR (Consolidated Emission Reporting Rule):

40 CFR part 51, Subpart A – Emission Inventory Reporting Requirements determines applicability based on the emissions of each criteria pollutant, PM2.5, PM2.5 precursors, and lead from any individual emission point within a facility. Emissions from each point source within a facility must be reported if the emission levels from each point source exceed the trigger levels defined in Appendix A of 40 CFR Part 51. VOC emissions are below the 100 TPY trigger level and as such, CERR does not apply.

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The Department does however require facilities to report their annual emissions if the facility-wide emissions exceed the Department's trigger levels. The Department's trigger level for VOCs is 25 tons per year. Since the facility has the potential to emit more than 25 tons per year VOC, they must report their annual emissions to the Department.

NSPS (Standards of Performance for New Stationary Sources):

As of this date, there are no NSPS performance standards for these source categories.

PSD (Prevention of Significant Deterioration):

PSD is not applicable to this facility because there are no new major sources and no new major modifications under consideration for this renewal.

Synthetic minor:

A synthetic minor is a facility that without limiting conditions, physical or operational, emits above the major triggering levels as defined by HAR 11-60.1-1 for either criteria pollutant(s) or hazardous air pollutant(s). This facility is a major source for HAPs and thus, not a synthetic minor.

Insignificant Activities/Exemptions:

Attachment 1 lists all of the Insignificant Activities.

Alternate Operating Scenarios:

The permittee may replace the mixing tank or paint arrestors with a temporary unit should those units require major maintenance.

Project Emissions:

Emissions from the existing sources were evaluated during the initial permit application. Since the operating parameters, including the means and methods, have not changed from the initial application, the original emission estimates remain valid. A brief recap of the emission calculations are described below.

For the mixing tank, the only emission is sulfuric acid. The emission of sulfuric acid was estimated using the MSDS and the assumption that 2.5 percent of the electrolyte solution is lost to evaporation. Using historical data, it was determined that 2,955 gallons of electrolyte solution is used per batch and that a maximum of 10 batches are done each year. Sulfuric acid emissions from the process were estimated at 882 lb/batch. Total emissions for 10 batches per year are 8,820 lbs, or 4.4 tons per year of sulfuric acid.

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Emission estimates for the spray booths were calculated based on mass balance, manufacturer's literature, and usage information. VOC and HAP emissions were calculated assuming that all of the VOCs and HAPs in the paint were emitted. VOC emissions were estimated at 15 tons per year for each paint spray booth. HAP emissions were conservatively estimated at 3.9 tons per year of ethyl benzene and 6.1 tons per year of xylene. PM₁₀ emissions were calculated using the weight of the paint and assuming 70 percent of the paint is transferred to the object. Of the 30 percent that is not transferred, it was assumed that 50 percent is drawn through the filter. With a filter efficiency of 94 percent, PM₁₀ emissions were estimated at 0.2 tons per year.

VOC and VOHAP emissions from the shipbuilding and repair operations were estimated using mass balance, MSDS, and usage information. Emission estimates assumed that all of the VOCs in the paint are emitted to the air. Annual emissions totaled 45.9 tons per year VOC or VOHAP. Per 40 CFR 63 Subpart II, the VOCs are used as a surrogate for VOHAPs.

Air Quality Assessment:

A modeling analysis is not required because an ambient air quality analysis was performed during the initial CSP permit application. A new ambient air quality analysis is not necessary because the facility demonstrated compliance with the SAAQS/NAAQS in the initial application and the facility reduced the number of emission units since the initial application. Further, the emissions from the new paint spray booths are very small and the emissions from the shipbuilding activities are considered area sources.

Conclusion and Recommendation:

The applicant has demonstrated compliance with the existing permit conditions and terms. Since no modifications were proposed, the facility should continue to remain in compliance with the renewed permit conditions and terms.

The issuance of a permit is recommended based on the information submitted by the applicant in the renewal application and the follow-up documents.

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ATTACHMENT 1
INSIGNIFICANT ACTIVITIES