1. GENERAL COMMENTS:

A. Company Information

<table>
<thead>
<tr>
<th>Physical Address</th>
<th>Mailing Address</th>
</tr>
</thead>
<tbody>
<tr>
<td>Raytheon Company Missiles &amp; Defense 1151 East Hermans Road, Tucson, Arizona 85756</td>
<td>Raytheon Company Missiles &amp; Defense PO Box 11337, Mail Stop 826 Tucson, AZ 85734-1337</td>
</tr>
</tbody>
</table>

B. Background

This facility previously operated under a one-year air quality permit first issued in 1993. Since conception the facility has operated as a manufacturer of missiles. The affected sources at the facility to which the air quality permit applies are identified in the following emission categories:

- Category B: NSPS for Stationary Compression Ignition Internal Combustion Engines (40 CFR Part 60 Subpart IIII) – Emergency Fire Pump Engines
- Category C: NSPS for Stationary Spark Ignition Internal Combustion Engines (40 CFR Part 60 Subpart JJJJ)
- Category D: Specific Conditions for NESHAP (40 CFR Part 63, Subpart ZZZZ) Reciprocating Internal Combustion Engines (Located at Area Sources of HAP, Constructed Before June 12, 2006).
- Category E: Specific Conditions for Material Issues. Applies to all Hazardous Air Pollutant and Volatile Organic Compound containing chemical purchases made at the facility.
- Category F: Facility Wide Specific Conditions. Other Facility Equipment Fossil Fuel Fired Equipment. Applies to the non NSPS boilers and generators at the facility.

Historical records indicate that Raytheon Company Missiles & Defense (RMD) - formally known as Hughes Missile Systems Company - has not had any major air quality violations. Past minor enforcement actions worth noting are presented in 3.A of this TSD. RMD was reclassified to a true minor source for HAPs at the time of their last renewal, September 22, 2016.

The Table below summarizes the permit actions taken since the last permit renewal, August XX, 2022.

**Summary of Permit Actions Within the Current Permit Term**

<table>
<thead>
<tr>
<th>Date Received/Approved</th>
<th>Permit Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>TBD</td>
<td>TBD</td>
</tr>
</tbody>
</table>
C. Attainment Classification

The facility is located in an area that is in attainment for all pollutants.

2. SOURCE DESCRIPTION:

A. Process Description

RMD designs, develops and assembles defense systems. Two significant process related activities produce air emissions, namely, plant-wide chemical purchases and fuel fired equipment.

RMD operates as a true minor source for nitrogen oxide (NOX) and for all other pollutants.

B. Air Pollution Control Equipment

The following types of air pollution control equipment are used at RMD:

- **Paint Booth Filters**
  All confined paint spraying operations are equipped with filter systems rated for the control of ≥96% overspray. This level of control is required at a minimum pursuant to Pima County Code (PCC) 17.16.400.C.1.

- **Low NOX Burners**
  One 5.58 MMBtu Trane Direct Fired Absorption Chiller (model ABS-M7A, serial L96L08808) is equipped with a direct fired burner rated <30ppm NOX. This air pollution control device is an integral part of the emission unit and is thus not required to be written into the permit as a specific condition to ensure compliance with the facility wide emission rate. Modifications or new equipment installations (including, but not limited to, usage of fuels not specified within the permit) that increase emissions to or above the emission limits shall require a significant permit revision.

- **Dust Collectors**
  Dust collectors are connected to particulate generating operations (e.g., abrasive blasting, wood working, surface grinding, etc) and are equipped with dry filter systems.
  
  A canopy-type hood is readily available on all equipment to capture fume emissions from the facility operations. All emissions collected in this manner are directed to each assigned process baghouse.

3. REGULATORY HISTORY

A. Testing & Inspections

The facility has been permitted since 1993 and has undergone regular inspections to date. Past minor enforcement actions worth noting are:

May 2000:

- Failure to limit the hours of operation of a fuel fired generator to 500 hours per rolling 12 month period as specified in the permit;

  [This enforcement action was adequately resolved and subsequently closed in June 2000.]
March 2001:
- Failure to submit written notification for start-up of a new diesel generator;
- Failure to submit written notification for the addition of a dual-spindle filament winder in building #815; and
- Failure to record and maintain records of the natural gas usage of the NSPS affected boiler according to 40 CFR 60.48c (g);

[These enforcement actions were adequately resolved and subsequently closed in July 2001.]

October 2005:
- Failure to limit the hours of operation of a fuel fired generator to 500 hours per rolling 12 month period as specified in the permit;

[This enforcement action was adequately resolved and subsequently closed in December 2005.]

Pima County Department of Environmental Quality (PDEQ) completed a full compliance inspection of the source on March 18, 2021. PDEQ determined that RMD was in substantial compliance with the conditions and requirements of Permit #1978 at the conclusion of the evaluation. The RMD facility is currently in compliance with their permit conditions.

B. Excess Emissions

The facility has submitted no reports of excess emissions.

4. EMISSIONS ESTIMATES

The following emission rates are for reference purposes only and are not intended to be enforced by direct measurement unless otherwise noted in the Specific Conditions of the permit.

<table>
<thead>
<tr>
<th>Pollutant</th>
<th>Potential Emissions (Tons per Year)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nitrogen Oxides (NOₓ)</td>
<td>*45</td>
</tr>
<tr>
<td>Carbon Monoxide (CO)</td>
<td>*48</td>
</tr>
<tr>
<td>Volatile Organic Compounds (VOC)</td>
<td>**63</td>
</tr>
<tr>
<td>Particulate Matter (as PM₁₀)</td>
<td>*&lt;3</td>
</tr>
<tr>
<td>Sulfur Oxides (SOₓ)</td>
<td>*&lt;1</td>
</tr>
<tr>
<td>Hazardous Air Pollutants (HAPs – individual)</td>
<td>**&lt;7</td>
</tr>
<tr>
<td>Hazardous Air Pollutants (HAPs – total)</td>
<td>**&lt;7</td>
</tr>
</tbody>
</table>

* RMD predominantly generates the potential emissions of NOₓ, CO, PM₁₀, and SOₓ solely from the combustion of fossil fuels. The newer federal regulations associated to internal combustion engines limit the maintenance and non-emergency use to 100 hours in any 12 month period. The regulation effectively eliminates the need for synthetic minor limitations on these regulated air pollutants. Potential emissions of NOₓ, CO, and SOₓ will remain below 90 tons per year. The emission factors used to determine the potential to emit are taken from EPA, AP-42, Volume I, Fifth Edition.

** Potential emissions of VOC and combined HAPs from material usage are calculated using current hourly operations multiplied by a factor of 1.73 to represent 8760 operating hours per year. Actual average (2017 - 2021) emissions of VOC and combined HAPs based on current hourly operations from material usage are 32.80 TPY and 3.04 TPY respectively.
5. APPLICABLE REQUIREMENTS

Code of Federal regulations (CFR):

40 CFR Subpart Dc  Standards of Performance for Small Industrial Commercial-Institutional Steam Generating Units

40 CFR Subpart III Standards of Performance for Stationary Compression Ignition Internal Combustion Engines

40 CFR Subpart JJJJ Standards of Performance for Stationary Spark Ignition Internal Combustion Engines


Environment Protection Agency: Compliance Assistance, Clean Air Act Applicability Determination Index:

Determination Detail Control Number 0300118

Pima County Code (PCC) Title 17, Chapters:

17.16.040 Standards and Applicability (Includes NESHAP)
17.16.130 Applicability
17.16.165 Standards of Performance for Fossil-Fuel Fired Industrial and Commercial Equipment
17.16.340 Standards of Performance for Stationary Rotating Machinery
17.16.400 Organic Solvents and Other Organic Materials
17.20.010 Source Sampling, Monitoring, and Testing

6. PERMIT CONTENTS

Category A: Specific Conditions for NSPS (Subpart IIII) Compression Ignition Internal Combustion Engines (Non-Fire Pump Engines)

The regulations identified within this category apply to stationary compression ignition internal combustion engines (CI ICE) identified in Table 1A/B, Attachment 2 of the permit.

Category B: Specific Conditions for NSPS (Subpart IIII) Compression Ignition Internal Combustion Engines (Fire Pump Engines)

The regulations identified within this category apply to stationary compression ignition internal combustion engines (CI ICE) identified in Table 2A/B, Attachment 2 of the permit.

Category C: Specific Conditions for NSPS (Subpart JJJJ) Spark Ignition Internal Combustion Engines

The regulations identified within this category apply to spark ignition internal combustion engines (SI ICE) identified in Table 3, Attachment 2 of the permit.
Category D: Specific Conditions for NESHAP (Subpart ZZZZ) Reciprocating Internal Combustion Engines (For Emergency Spark and Compression Ignition Engines)

The regulations identified within this category apply to compression ignition and spark ignition reciprocating internal combustion engines (RICE) identified in Table 4, 5 and 6, Attachment 2 of the permit.

Category E: Specific Conditions for Material Issues

The regulations identified within this category apply to all chemical purchases made by RMD for process related activities.

Category F: Facility Wide Specific Conditions

The provisions of this Category apply to all other operations and equipment specifically listed in Table 7 of Attachment 2 of the permit (Non-NSPS equipment).

7. Miscellaneous Comments:

- PCC 17.16.400.C.5 limits the emissions of VOCs from surface coating of miscellaneous metal parts and products. RMD maintains appropriate SDS records to show compliance with the content limits required by this standard. Coating emissions data can be obtained from the MVOCER inventory and for this reason; the requirement of this VOC limiting standard has been omitted from the permit.

- Category C, specific condition 2.E.4 of the permit details performance testing requirements for stationary SI internal combustion engines. To clarify, the following definition is provided for identifying a rebuilt SI ICE:

  Engine rebuilding means to overhaul an engine or to otherwise perform extensive service on the engine (or on a portion of the engine or engine system). For the purpose of this definition, perform extensive service means to disassemble the engine (or portion of the engine or engine system), inspect and/or replace many of the parts, and reassemble the engine (or portion of the engine or engine system) in such a manner that significantly increases the service life of the resultant engine.

- PCC 17.16.165.C.1 limits the emissions of particulate matter from a fuel burning operation. This rule has not been included in the permit as allowable emissions are well above potential emissions. The Allowable emissions vs. AP-42 emission factor chart illustrates this fact:

  AP-42 estimated emissions are demonstrably significantly less than the allowable emissions (at 250 MMBtu/hr input capacity, the allowable emissions rate is 72.3 lb/hr while AP-42 estimates 1.90 lb/hr). Therefore, it is not necessary to include the standard in the permit explicitly but by reference in Attachment 1.
• Non Applicable Federal Regulations

40 CFR 63, Subpart MMMM, National Emission Standards for Hazardous Air Pollutants for Surface Coating of Miscellaneous Metal Parts and Products.

This rule does not apply to surface coating or coating operations at installations owned by the US Air Force or of military munitions manufactured for the Armed Forces of the United States including the Coast Guard and the National Guard of any such State. [40 CFR 63.3881(c)(4)].


This rule does not apply to surface coating or coating operations at installations owned by the US Air Force or of military munitions manufactured for the Armed Forces of the United States including the Coast Guard and the National Guard of any such State. [40 CFR 63.4481(c)(3)]

8. IMPACTS TO AMBIENT AIR QUALITY

Not a major source thus no studies are required.

9. CONTROL TECHNOLOGY DETERMINATION

No control technologies needed to be determined; source is not subject to BACT or LAER. This is a facility that designs, develops and assembles defense systems operating as a Class II, true minor source.

10. PREVIOUS PERMIT CONDITIONS

Not applicable, there has been no significant changes to the permit as part of this permit renewal.