

AVOID VERBAL ORDER

DATE: April 21, 2005

TO: Distribution

ORG:

SUBJECT: RICE Permitting Requirements

This NASA/KSC AVO will address the permitting issues and requirements for RICE (Reciprocating Internal Combustion Engines) or electric generators and engines, which have been a topic of concern in recent months and needs to be made clear. RICE located at KSC is applicable to the general air permitting requirements of FDEP and the RICE National Emission Standards for Hazardous Air Pollutants (NESHAP). Information identified in this AVO does not replace the EPA and FDEP regulations or guidance, so please refer to those for more detail.

RICE generally can be placed into two categories of engines: stationary or mobile. It is important to remember that all information in this AVO and other guidance refers only to stationary RICE and all mobile sources are exempt from both air construction and air operation permitting and NESHAP regulations. The RICE NESHAP defines stationary RICE as any engine that uses reciprocating motion to convert heat energy into mechanical work and is not mobile. Stationary RICE differ from mobile RICE in that a stationary RICE is not a road engine (motor vehicle) or nonroad engine (tractors, cranes, and bulldozers) as defined at 40 CFR 1068.30 (Control of Emissions of Air Pollution From Nonroad Diesel Engines and Fuel Regulations), and is not used to propel a motor vehicle or a vehicle used solely for competition. In 40 CFR 1068.30, if a permanent engine (at KSC for at least two years) remains or will remain at a single location (i.e., building, structure, or installation) for less than 12 consecutive months, it is characterized as a mobile source. Any engine (or engines) that replaces an engine at a location and that is intended for perform that same or similar function as the engine replaced will be included in calculating the consecutive time period. Any temporary engine (at KSC for less than two years) is characterized as a mobile source if it operates at a single location approximately three (3) months or less during a full annual operating period (calendar year).

Existing RICE at KSC is permitted on the Title V Air Operation Permit and is divided into three emission units. The first two emission units are regulated based on the fuel used by the engines (i.e., diesel or gasoline) and include the entire array of stationary engines at KSC. The emissions are based on the total sum of the amount of fuel used by the units. The last emission unit includes the diesel engines located at the C5 emergency power plant. At the C5 emergency power plant, there are limits placed on the total fuel usage for the engines and there is also a limit on the operating hours. The following is a listing of the RICE emission unit and the 12-month consecutive limits for each currently permitted on the KSC Title V Air Operation Permit:

- EU086, KSC Diesel Fired Units with a limit of 305,000 gallons of diesel fuel,
- EU087, KSC Gasoline Fired Units with a limit of 38,000 gallons of gasoline fuel, and
- EU088, LC39 Emergency Power Plant (C5) with a limit of 170,000 gallons of diesel fuel and 1250 hours of operations.

In the past, the Environmental Program Branch (EPB) had the policy that any new or reconstructed RICE would automatically roll into EU086 or EU087. During the 2004 Environmental Functional Review (EFR), this policy was challenged and NASA/KSC has adopted

new policy as defined below. It states that if any new or reconstructed stationary RICE is purchased or otherwise acquired by KSC, the engine must be evaluated to determine the emissions and the standard operating procedures against the permitting emission thresholds and regulations on an individual basis like all other air emission units for the need of an air construction permit and/or operation permit. This must be performed prior to installation. Once a calculation is performed, a determination is made as to whether the engine is under or over the permitting emission threshold (0.5 tons per year of individual HAP, 1.25 tons per year of total HAPs, 0.25 tons per year of lead, or 5 tons per year of all other criteria pollutants (i.e., CO, PM, VOC, NO_x, SO₂, etc.)). If the engine is over the permitting emission threshold and is not also applicable to the RICE NESHAP (less than 500 HP), then the new or reconstructed stationary RICE is required to apply only for an air construction permit and then can be rolled directly into EU086 or EU087 with no additional changes to the Title V air operation permit or reporting and/or recordkeeping requirements. If the engine is over the permitting emission threshold and is also applicable to the RICE NESHAP (see below), then the new or reconstructed stationary RICE is required to apply for an air construction permit concurrently with a revision to the KSC Title V Air Operation Permit and will have additional requirements to comply with the RICE NESHAP. All new or reconstructed RICE that must apply for an air construction permit or a revision to the KSC Title V Air Operation Permit must submit four (4) copies of a Professional Engineer (PE) signed and sealed application to the EPB for submittal to the FDEP prior to construction or installation.

On June 15, 2004, the EPA promulgated the RICE NESHAP (40 CFR Part 63, Subpart ZZZZ) and the EPB notified KSC of the requirements for existing and new RICE in an e-mail dated October 4, 2004, which contained an AVO and an information sheet on the RICE NESHAP. Based on the information received and confirmation from the FDEP, existing RICE at KSC have no requirements in the RICE NESHAP. The new requirements of RICE NESHAP did however further expand the requirements for permitting new and reconstructed stationary RICE. New or reconstructed RICE that must comply with the RICE NESHAP must concurrently apply for an air construction permit and a revision to the KSC Title V Air Operation Permit by submitting four (4) copies of a PE signed and sealed application to the EPB for submittal to the FDEP prior to construction. The affected sources for the RICE NESHAP (sources applicable to the regulations) are all stationary RICE over 500 HP (approximately 375 kW). There are some possible exemptions based on the method of operation for the RICE NESHAP that must be identified prior to construction. The first is for Emergency RICE. Emergency RICE are only used to produce power for critical networks or equipment (including power supplied to portions of a facility) when electric power from the local utility is interrupted, or stationary RICE used to pump water in the case of fire or flood, etc. Emergency stationary RICE may be operated for the purpose of maintenance checks and readiness testing, provided that the tests are recommended by the manufacturer, the vendor, or the insurance company associated with the engine. Emergency RICE may also operate an additional 50 hours per year in non-emergency situations. Emergency RICE are NOT a generator that is in a "back-up mode" or powered-up while the primary source of power is still available in the case it may be lost or interrupted during a critical or non-critical operation. The second and less complicated exemption is Limited-Use RICE. Limited-Use RICE are RICE that operates less than 100 hours per year. All hours of operation, including operation during routine testing and maintenance is counted towards the 100 hours per year limit. New RICE that must comply with the RICE NESHAP will have emission limitations and operating limitations along with control equipment or continuous emissions monitor, performance testing, initial and continuous compliance requirements, monitoring, installation, operation, and maintenance requirements. More detailed compliance information can be found in the **MACT Compliance Handbook for the RICE NESHAP** at <http://www.epa.gov/ttn/atw/rice/mactcomply.pdf>

Calculations performed by the EPB can be used as a rule-of-thumb to make a quick determination for the permitting needs of RICE, but these are based on AP-42 emission factors that may change and are only approximate values. To get a more exact determination, contact the EPB with the capacity and method of operation of the proposed RICE. Here is a break-down of permitting requirement estimates for stationary RICE:

- If RICE is less than ~100 HP (~75 kW), no permit is required.
- If RICE is greater than ~100 HP (~75 kW) but less than 500 HP (~375 kW), an air construction permit is required and the unit will roll into the current Title V Operation Permit.
- If RICE is greater than 500 HP (~375 kW), an air construction permit and a revision to the Title V Operation Permit is required.

If you have any questions or concerns, please call me at 7-1599 or Dan Rembert at 7-8428.

FROM: *Original Signed by*
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