

ATTACHMENT 10

T-29B HYDRAZINE DILUTION PROCEDURES

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10 **HYDRAZINE DILUTION PROCESS**

10-1 **PURPOSE AND SCOPE**

ATK Launch Systems - Promontory (ATK) operates a small treatment process to dilute waste hydrazine at Building T-29B. This process dilutes hydrazine waste with water so that waste hydrazine solutions do not exceed hydrazine concentrations above 50 percent. The dilution process is necessary because of the extreme flammability and reactivity of hydrazine and the lack of a disposal facility for concentrated hydrazine. The diluted waste hydrazine is shipped off plant to an incinerator for destruction.

10-2 **PROCESS DESCRIPTION**

The dilution of waste hydrazine with water is a simple process. ATK does not generate large amounts of waste hydrazine, but because hydrazine is extremely flammable and reactive, special care must be used in its disposal. Hydrazine is used during a motor firing static test process. At the completion of the test, residual hydrazine is removed from the test system and is collected in a small, nitrogen purged, cart mounted tank, and transferred to Building T-29B. Typically hydrazine is filtered and stored in the tank until it is used during the next static test. In the event the hydrazine can't be used or is no longer needed it is transferred to a drum where it is mixed with water and sent off-site for disposal as a hazardous waste. Lab samples from quality assurance testing of the hydrazine product are also dumped directly into the water /hydrazine diluted drum for disposal. The waste collection container can be managed as either a 90-day waste or under satellite accumulation rules depending on the waste volume.

Here is a description of the hydrazine mixing process. This tank is equipped with a scrubber vent system which is utilized during initial transfer into the tank. A volume of water equal to the volume of hydrazine is placed into a 55-gallon drum at T-29B. A tube is run from the tank into the bottom of the 55-gallon drum. The hydrazine is then dispensed into the drum through the tube using nitrogen pressure. This process is repeated until the collection container is full. This transfer is performed with personnel in Level A personal protective equipment (PPE). After the transfer is complete, the air in the room is tested to assure safety before the Level A PPE is removed.

The system is designed and operated to prevent any releases and to safely transfer the material. After the material transfer has been completed, the

material is shipped off plant for disposal or sent to the M-186 Hazardous Waste Storage Facility.

10-3

ENVIRONMENTAL PERFORMANCE STANDARDS

The T-29 Hydrazine dilution process has been located, designed, operated, maintained and will be closed in a manner that will ensure protection of human health and the environment. This section addresses the prevention of releases due to migration of hazardous constituents into the ground water or subsurface environment, surface waters, wetlands, surface soils, and in the air.

10-3-1

Prevention of Releases to Ground Water or Subsurface Environment

Several parameters have been considered in determining the prevention of a release to ground water or subsurface environments. It is important to note that there will only be a limited amount of pure hydrazine, generally no more than 55 gallons, to dilute at any one time and that this process is all done within a containment system. The containment system is shown in the facility drawing contained in Attachment 6 (Figure H-1). Because of the secondary containment, there should be minimal potential for deposition or migration of waste constituents into the subsurface or groundwater.

10-3-2

Prevention of Releases to Surface Water, Wetlands, or Soil Surface

The dilution area has secondary containment to ensure collection of any spill. A 7,500-gallon, emergency-use-only sump has been designed to contain any spill. The sump is only used if a spill occurs; it is not used on a routine basis. The sump is designed to collect any large spill and has more than sufficient capacity to hold any spill during the dilution process.

The use of this containment, along with careful procedures and the low volume of waste, reduces the potential for any adverse effect on human health or the environment.

10-3-3

Prevention of Releases to Air

The transfer of hydrazine is conducted with strict safeguards and procedures to prevent the migration of waste constituents in the air. This process transfers the hydrazine using nitrogen. Escaping gases are minimized by discharging through a tube under water in the collection drum. These procedures minimize the quantity of any hydrazine migration through the air and minimize the potential for any adverse effects to human health or the environment.

10-4 **MONITORING, ANALYSIS, INSPECTION, RESPONSE,
REPORTING, AND CORRECTIVE ACTION**

Because hydrazine requires special handling precautions and safety procedures, ATK personnel follow internal procedures when performing the dilution process. ATK will conduct the dilution process in a manner that will ensure protection of human health and the environment.

ATK will comply with the requirements specified in the facility Contingency Plan (Attachment 4), when there has been a release at Building T-29B that threatens human health or the environment.

ATK will comply with the ignitable and reactive waste regulations as required by UAC R315-264-17.

ATK will inspect Building T-29B in accordance with the inspection schedule contained in Attachment 2.

10-5 **RECORD KEEPING AND REPORTING**

ATK will record in the operating record the following:

1. The date that waste hydrazine is received at T-29B;
2. The quantity of waste hydrazine received;
3. The date the waste hydrazine is treated by the dilution process;
4. The quantity of diluted hydrazine after the dilution process is complete; and
5. The date the diluted hydrazine is shipped off-site or to the M-186 storage facility.

10-6 **CLOSURE**

ATK will close Building T-29B in accordance with R315-264-110 through 120, R315-264-178, Permit Condition II.O. and the designated Closure Plan in Attachment 5 of this Permit.