

Kennedy Space Center

A composite image featuring a space shuttle launch in the center. The shuttle is ascending with a large plume of fire and smoke. To the left, a launch pad service structure is visible. In the background, two blue pyramids are superimposed over the scene. The entire image is set against a soft, pinkish-purple gradient background.

RADIATION PROTECTION PROGRAM OVERVIEW



GENERAL POLICY

- Centralized Control and Hazard Analysis of Radiation Sources
- Formal and Standardized use Authorization Process
- ALARA Principle (As Low As Reasonably Achievable)
- Applicable to both KSC and CCAFS areas



PROGRAM DOCUMENTS

- KNPD 1860.1 - KSC RPP
- KNPR 1860.1 - Ionizing RPP
- KNPR 1860.2 - Non Ionizing RPP
- 45 SW Instruction
40-201 - Radiation Protection Program



IONIZING SOURCES

- Radioactive Material

 - Flight and Ground Calibration/Check Sources

 - Radioisotopes in Research

 - Static Meters/Smoke Detectors

 - Heater Units/Power Sources

 - Radiography

- Radiation Devices

 - X-ray Machines (Diagnostic/Industrial)

 - Accelerators



NON-IONIZING SOURCES

- RF/MW Emitters

 - Radar

 - Communications

 - Telemetry

 - RF/MW Generators

 - RF Sealers/Heaters

- Laser/Laser Diodes

 - Alignment/marking

 - Distance and Ranging

 - Fiber Optics

- Optical Sources

 - Infra Red

 - Hi Intensity Visible

 - Ultra Violet

USE REQUEST-AUTHORIZATION PROCESS

- User Completes and Submits KSC Forms
 - Identification & Descriptions
 - Procedures
 - Locations
 - User Qualifications
- Submittal is Evaluated for Hazard Potential and Regulatory Compliance
- Controls and Conditions are Assigned
- RPC Issues approved U/A Package to User



PROVISIONS & GUIDELINES

- Exemptions
 - Negligible or no Hazard
 - Exempt from Controls
- General Use Authorizations
 - Minimal Hazard
 - Valid Indefinitely
 - Hazardous Procedures
- Specific Use Authorizations
 - Moderate to High Hazard
 - Annual Renewal
 - Hazardous Procedures
- Hazard Evaluation
 - Theoretical/CALC
 - Worst Case
- Survey/Measurement
 - Verification & Compliance



Radiation Use Authorization

- I. Applicable personnel protective standards
- II. Authorized sources and approved use/storage locations
- III. Authorized user personnel
 - A. Area Radiation Officer (ARO): Individual designated by the user organization's management as their representative for matters pertaining to the local control of radiation hazards
 - B. Operators of radiation sources/emitters
- IV. Applicable customer operating procedures



Radiation Use Authorization (Continued)

V. Hazard Evaluation

A. Operating Parameters and Protection Guide

B. Range of Hazard Distance

VI. Operational Provisions

A. Operational Controls and Provisions

1. Radiation Control Areas: Defined areas for the control of personnel exposure.
2. Notification Requirements
3. Posting Requirements
4. Inventory/Accountability Requirements
5. General Operating Provisions

B. Administrative Provisions

1. Authorized Period of Use
2. RUA Change Request procedures

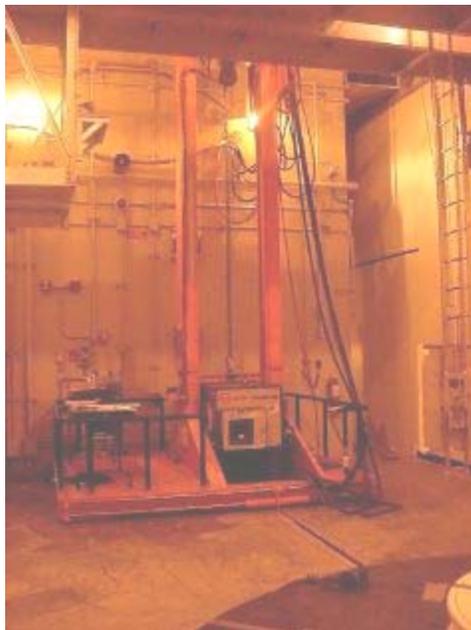


Diagnostic X-Ray Rooms





Industrial X-ray Rooms



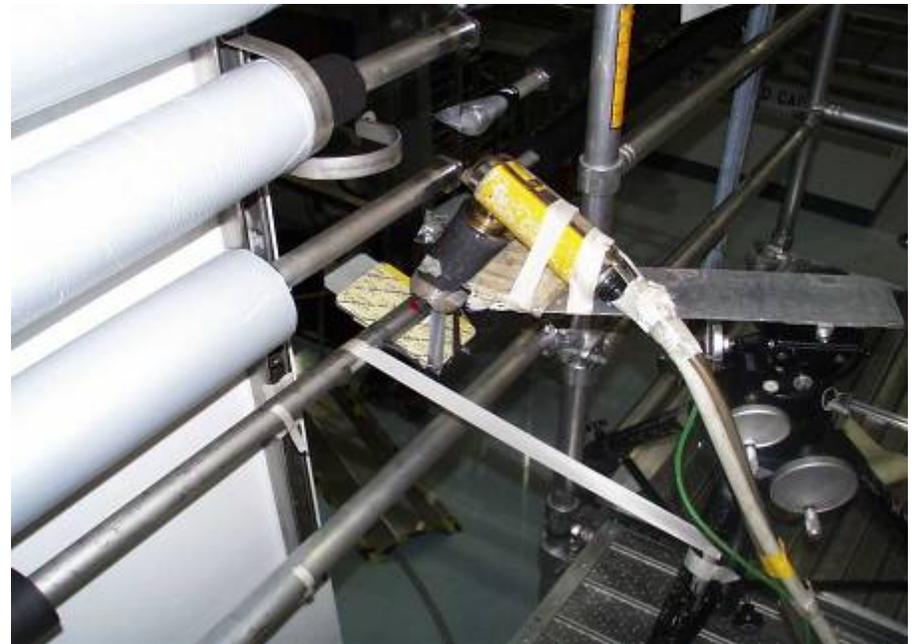


X-Ray Cabinet Units



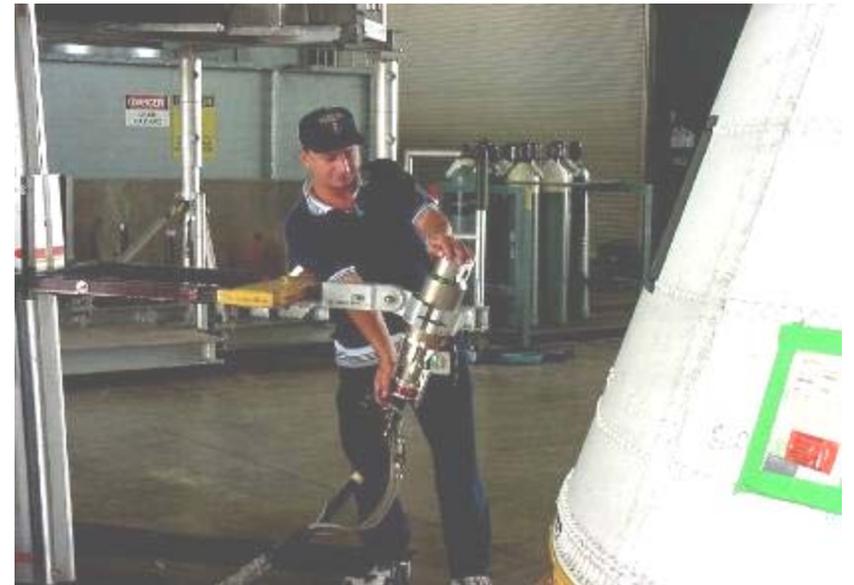


Portable X-Ray Equipment





Portable X-Ray Operations





Portable & Fixed Gamma Ray Radiography



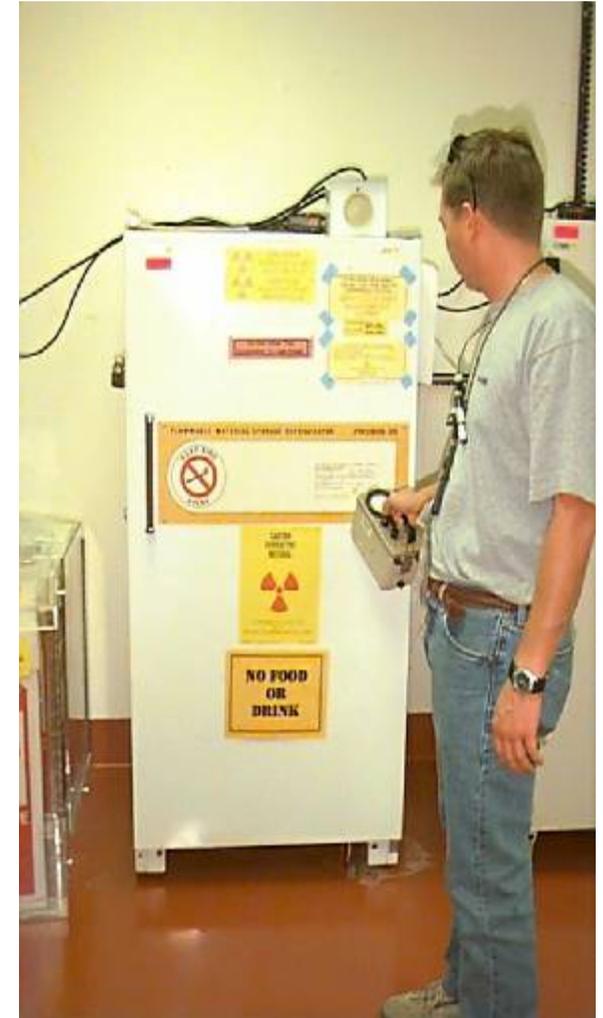


Processing Space Trash





Unsealed Radioactive Material Usage





Radio Frequency Emitters





Radio Frequency Emitters



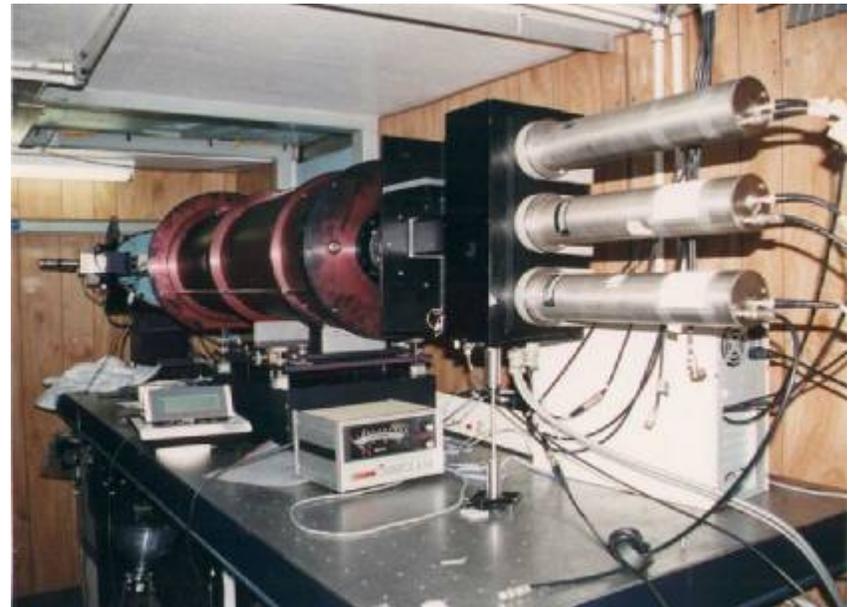


Enclosed & Fixed Laser Emitters





Mobil Laser Emitters





Health Physics Laboratory



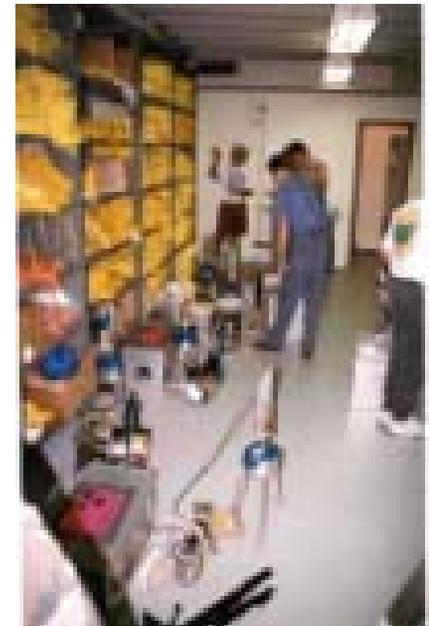


Processing of Large Radioactive Source Payloads





Large RAM Launch Contingency Operations





Evaluate + Calculate + Communicate + Monitor = RPP

